Research Report

NORTHERN ALBERTA MANPOWER

NEEDS ASSESSMENT

Final Report

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Final Report

Prepared for

The Northern Alberta Development Council

By

Harvey Social Research Ltd.

June, 1985

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July 5, 1985

Mr. Roger Jackson
Senior Northern Development Officer
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Dear Mr. Jackson:

We are pleased to submit the Final Draft of the Northern Alberta Manpower Needs Assessment Report. This was an interesting and challenging study and both Bill MacDonald and I appreciated the opportunity to work on it.

The Final Report provides you with an overview of economic conditions in Northern Alberta and specific information on the positions employers have projected for the next two years requiring graduates of degree or diploma programs. We hope this information will be of assistance to the Northern Alberta Development Council Bursary Committee and to students who are considering program options both at the high school and post-secondary level.

This study was not an evaluation of the NADC Bursary Program. However, a number of the employers and post-secondary institution officials who were contacted in the course of the study volunteered favourable comments about the program. Suggestions for increasing communication related to the Bursary and its recipients were also volunteered.

We have set out a number of recommendations regarding future collection of manpower projections and some aspects relating to the Bursary Program. We have also recommended an evaluation of the Bursary Program and the creation of a data bank on economic

and labour force conditions in Northern Alberta.

Thank you for all your help in conducting this study. We appreciated it very much.

Sincerely

Ann L. Harvey

Ann L. Harvey
Project Manager

The Study Team

Dr. Ann Harvey Project Manager	Harvey Social Research Ltd.
Dr. Bill MacDonald Government Agency Consultant	Krawetz and MacDonald Research Management Consultants

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We are also appreciative of the time and care taken by the many employers who responded to the survey by letter, telephone or personal interview and particularly, to those who assisted with the pretesting of the survey instrument.

We would especially like to thank Mr. Roger Jackson, Senior Northern Development Officer and Project Director, for his generous assistance in paving the way for the Manpower Survey, in providing many of the documents for background review and in giving clear and helpful direction throughout the study process.

We are also indebted to the members of the Steering Committee,

Mr. G. Archibald, Director, Research and Analysis
Northern Development Branch, Peace River

Mr. G. Milligan, Director, Council Administration
Northern Development Branch, Peace River

and
Mr. E. Gromek, Program Manager
Opportunity Corps
Alberta Manpower, Slave Lake

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Sincere thanks are due to Ms. Lyn Tait, Director, Resource Industries, Manpower Planning Secretariat, Edmonton for making available a substantial amount of background information for the study.

EXECUTIVE SUMMARY

In 1985 the Northern Alberta Development Council undertook a study to provide data on manpower needs in Northern Alberta. Information on employers' needs for graduates from post-secondary institutions was required to assist the NADC Bursary Committee in making its awards. The Committee endeavours to award bursaries that meet employer as well as student needs, thereby enabling student bursary recipients to meet the return service obligation aspect of the Bursary. The bursaries are directed to candidates in post-secondary educational programs requiring a minimum of one full year attendance.

The firm of Harvey Social Research Ltd. was contracted to conduct the study and Krawetz and MacDonald Research Management Consultants was retained as a sub-consultant.

The study approach involved collecting data directly from employers as to their specific manpower needs and from government agencies and post-secondary institutions to provide a broader view of economic conditions and projected developments for Northern Alberta.

The Government Agency Survey on General Economic and Employment Conditions

Nineteen provincial and federal departments were contacted for reports or specific information related to manpower needs and economic developments. The Alberta departments of Energy & Natural Resources, Housing, Manpower, Social Services & Community Health, and Tourism & Small Business (Northern Development Branch), as well as Employment and Immigration Canada and Statistics Canada provided the main sources of information for the survey.

Projected population growth for the three census divisions included in the study area based on Alberta Treasury Bureau of Statistics Series A Projections was 10,400 for C.D. 12 (including Fort McMurray), 3,200 for C.D. 13 (including Whitecourt) and 10,600 for C.D. 15 (including Grande Prairie) from 1985 to 1990.

Recovery from the recent recession is evidenced in Northern Alberta by increased oil and gas activity throughout the north,

especially heavy oil and oil sands developments in the eastern region of Northern Alberta. The construction industry, and the oil field service industry are both benefitting from this activity. The other sectors of the economy such as agriculture, coal and forest products, and services (for example, health or education) are not expected to expand substantially. The energy industry is the only high profile source of growth seen for Northern Alberta in the short term.

Increased energy industry activity in Northern Alberta is expected to create more jobs; however, the actual effect on unemployment levels is not certain, given general growth in the working age population and possible in-migration of people with skills needed. The only major impact foreseen is the possible construction of a new oil sands plant. Other sectors, such as construction, manufacturing, transportation, business and health services are not expected to expand significantly to affect general unemployment levels.

Only one source identified in the survey of government agencies, the Alberta Health and Social Services Disciplines Committee, provided recent data on highly qualified manpower for Northern Alberta. While there are models used by the federal and provincial governments to forecast manpower demand, they are not adapted for use in a region the size of Northern Alberta.

The Manpower Survey

A total of 270 employers were contacted, either by mail, telephone or a personal interview and asked to project the positions they anticipated would need to be filled by graduates of post-secondary institutions in 1986 and 1987. The sample included all hospital administrators, school superintendents, health units, AADAC local units, native friendship centres, family and community support services and colleges in Northern Alberta. As well, the sample included a cross-section of local businesses, large firms with head offices in Edmonton or Calgary, municipal offices for all towns and cities, provincial and federal government departments with offices in the region, referrals from Chambers of Commerce, villages, counties, I.D.'s and M.D.'s and a selection of libraries.

Of the 257 employers included in the mailed survey, about 60

percent responded. With limited telephone follow-up to non-respondents and 13 personal or telephone interviews with major industry recruitment officers, the response rate was increased to 75 percent. Due to systematic selection for follow-up calls, all of the major employers for Northern Alberta were contacted. A total of 111 employers projected positions requiring highly qualified manpower for 1986 and 1987.

The employers projected positions both for a current economic climate scenario and for any likely scenario involving a major economic change such as increased oilfield activity or expanded services by the employer.

Employers were asked to report only positions that could be filled by new graduates. They were also asked to indicate positions they anticipated having particular difficulty filling.

The responses from the employers were grouped according to region and included the Cold Lake and Area Region, Grande Prairie, Fort McMurray, Peace River and Small Northern Towns (grouped as a region) and a region labelled Unspecified Northern Locations for southern employers who did not report exact locations of projected positions. Projections for specific diploma or degree graduates were reported both for the condition of no economic change (that is, normal staff turnover) and for specific major changes such as a new hospital or increased oilfield activity in the area. The total numbers needed for each of the programs in each of the next two years ('86 and '87) are included in the regional tables found in the main report. These regional tables contain the raw data and do not take any other factors into account such as the number of trained people already in the area who could be expected to compete for jobs.

The Post-Secondary Institution Survey

Five post-secondary institutions including three in the NADC area (Grande Prairie Regional College, Fairview College and Keyano College), as well as Lakeland College and NAIT were contacted for any available information on employers' needs.

Of the five institutions, NAIT was the only one to have an ongoing system for tracking its graduates to their first jobs and reporting the results by program. The annual report of graduate

placements from NAIT includes information for each program on percentage of graduates obtaining training-related employment.

Development of the Priority Program Lists

Four outside sources of information proved useful in assigning priorities to the positions projected by northern employers. These included the Alberta Health and Social Services Disciplines Committee annual report for 1984, the NAIT 1984 Graduate Placement Fact Sheets Report, a limited review of available manpower data for trends, and comments made by employers either written on the surveys or in the course of the telephone and personal interviews.

The degree and diploma programs were separately rank ordered according to the total number of projected positions for the "No Change" (current economic climate) scenario. The rank ordered lists were then divided into six levels of need based on the numbers of positions projected and information available from the four outside sources. The results are presented in the following priority lists (List for Degree Programs and List for Diploma Programs).

In each list the need for program graduates according to the Manpower Survey progresses step by step from the highest need to the lowest need. The need levels represent numbers required from each type of program as well as difficulty in finding such graduates for positions. The need for over 20 graduates is projected for each of the Highest Need Level programs, for example. An oversupply of trained people in Northern Alberta is indicated for programs in the Sixth (or lowest) Need Level.

It should be pointed out that because employers were sampled, the actual number of graduates needed would be higher than the data collected would indicate. This was one reason for not attaching specific numbers to the programs in the Priority Lists. The other main reason was that employers were asked to project their needs as carefully as possible. There was no commitment associated with completing the survey information, however.

Priority List for Degree Programs in the Current Economic Climate

Highest Need Level	BEd French Immersion Engineering - Mechanical Physiotherapy
Second Need Level	BEd French I A & Voc Ed Math, Science BSW Engineering - Electrical
Third Need Level	Computer Science Engineering - Chemical Mining Medical Doctors Occupational Therapy
Fourth Need Level	BEd Home Ec Language Arts Math Reading, Math, Social Studies Unspecified BScN Community Health Psychiatric Unspecified Pharmacy Speech Therapy
Fifth Need Level	BEd Adult Ed Business Ed Dentistry Dietetics Engineering - Metallurgical Mineral Processing Geology Geophysics
Sixth Need Level	Commerce BEd Elementary Engineering - Civil Forestry

Priority List for Diploma Programs in the Current Economic Climate

Highest Need Level	Dental Hygienist
	Power Eng Tech
Second Need Level	Early Childhood Development
	Nurses - Degree or Diploma
Third Need Level	Computer Systems Tech
	Dental Assistant
	Instrumentation Eng Tech
	Medical Lab Tech
Fourth Need Level	Admin/Finance/Marketing
	Criminology Deg or Social Services Dip
	Dietary Tech
	Library Tech
	Medical X-Ray Tech
	Occup Health Nurse
	Respiratory Tech
	Secretarial Sciences
	Social Sciences Deg or Dip
Fifth Need Level	Addictions Counselling
	Agriculture
	Appraisal & Assessment
	A-V Tech
	Biomed Tech
	Combined Lab & X-Ray Tech
	Civil Eng Tech
	Denturist
	Eng Design & Drafting Tech
	Legal Secretary
	Life Skills
	Mech-Industrial Eng Tech
	Recreation Therapist
	Youth Development
Sixth Need Level	Accounting
	Registered Nursing Assistants

Priorities Based on Economic Change

Approximately one-third of the employers projected positions that would be required in addition to the "No Change" scenario for major developments they foresaw in their region.

Manpower needs required to operate expanded services were projected for five hospitals or hospital units, two native offices and a regional library system. Increased oilfield activity projections were made by employers in the Cold Lake Area and in the Peace River and Small Towns Region. Many Fort McMurray employers made projections for a new oil sands project.

As these economic developments occur, the projected positions based on each development can be integrated into the numbers and outside considerations used to develop the current priority lists. Updated priority lists based on the changing economic climate will then be available.

Recommendations

It was recommended that manpower survey data be collected annually from employers who projected the need for three or more positions in the 1985 survey.

It was suggested that, in future, permission be requested to use health and social service vacancy data collected by another government agency.

It was recommended that all bursary recipients be given 18 months after graduation before being required to begin their return service agreement.

Increased communication concerning the NADC Bursary, its recipients and Northern Alberta employers was recommended.

The need for an in-depth evaluation of the NADC Bursary Program was pointed out.

Finally, it was recommended that a data bank of regularly updated information pertaining to Northern Alberta economic and labour force conditions should be established.

1. Introduction

This chapter includes an overview of the study, the background to the study, the study team, the terms of reference, definitions and the organization of the report.

1.1 Overview of Study

This study was an assessment of highly qualified manpower needs in Northern Alberta including written surveys, and telephone or personal interviews with a majority of the major employers in Northern Alberta. Government agencies were contacted for employment projections and for forecasts of economic developments that could increase the need for trained employees in the study area.

The data collection was tailored to fit the requirements of the committee administering the Northern Alberta Development Council (NADC) Bursary Program. NADC bursaries have a return service agreement which means that bursary recipients agree to live and work in Northern Alberta immediately upon graduation from their post-secondary program in return for Bursary support.

1.2 Background to the Study

The Northern Alberta Development Council Bursary Program is jointly run by the NADC, Alberta Advanced Education, and Alberta Manpower. The Program is designed primarily to offer an incentive to attract professionally trained Albertans to Northern Alberta. It is also intended as an incentive to northern residents to participate in postsecondary education. In both cases, the bursaries are directed essentially to candidates in educational post-secondary streams that will eventually place them in professions perceived to be in demand in Northern Alberta.

The identification of manpower shortages in Northern Alberta for the Bursary Program is a responsibility of the Northern Alberta Development Council. Each year, as part of the selection process, a list of priority occupations is prepared by the Northern Development Branch of Alberta Tourism and Small Business based on their own surveys and reports from other government

departments. These data sources have been found to have limitations when used for awarding bursaries. The information is not always as specific as the Committee would prefer, sometimes there are inconsistencies between sources and some of the information reported is for employment in past years but includes no projections for future employment.

In 1980 a study was contracted to the Management Advisory Institute to project highly qualified manpower requirements in Northern Alberta from 1981 to 1985. The current study was contracted to Harvey Social Research Ltd. in 1985 to project highly qualified manpower requirements in Northern Alberta from 1986 to 1990, with detailed projections for 1986 and 1987.

1.3 The Study Team

The Study Team consisted of Dr. Ann Harvey from Harvey Social Research Ltd. and Dr. Bill MacDonald from Krawetz and MacDonald Research Management Consultants. Dr. MacDonald was responsible for the Government Agency Survey and the related chapter of the Final Report. Dr. Harvey was Project Manager and responsible for the Manpower Survey, the Post-Secondary Institution Survey and the Final Report.

1.4 Terms of Reference

The study had two parts:

1) the compilation of a priority list of highly qualified professions-in-demand to service the needs of industry, government and communities in Northern Alberta

2) the development of an instrument which could easily be used each year to update the priority listing, for use by the Northern Alberta Development Council Bursary Program.

More specifically, the study was to include a review of literature on Northern Alberta manpower requirements, development of lists of major projects, industries and employers in Northern Alberta for the period 1985-1990 and informative employer and organizational contacts, a description of factors influencing regional manpower demand and a compilation of specific professions-in-demand for 1986 and 1987 by region.

To develop the list of professions-in-demand a survey instrument was to be designed and refined. A method for regularly collecting and analyzing manpower data with the survey instrument was to be developed for use by the Northern Development Branch.

The terms of reference for the study did not include an evaluation of the NADC Bursary program itself.

1.5 Definitions

Highly qualified manpower was defined as graduates of programs requiring a minimum of one full year attendance at a post-secondary institution.

Six general categories were included: management and administration, science and engineering, social science, teaching, medicine and health, and arts and recreation.

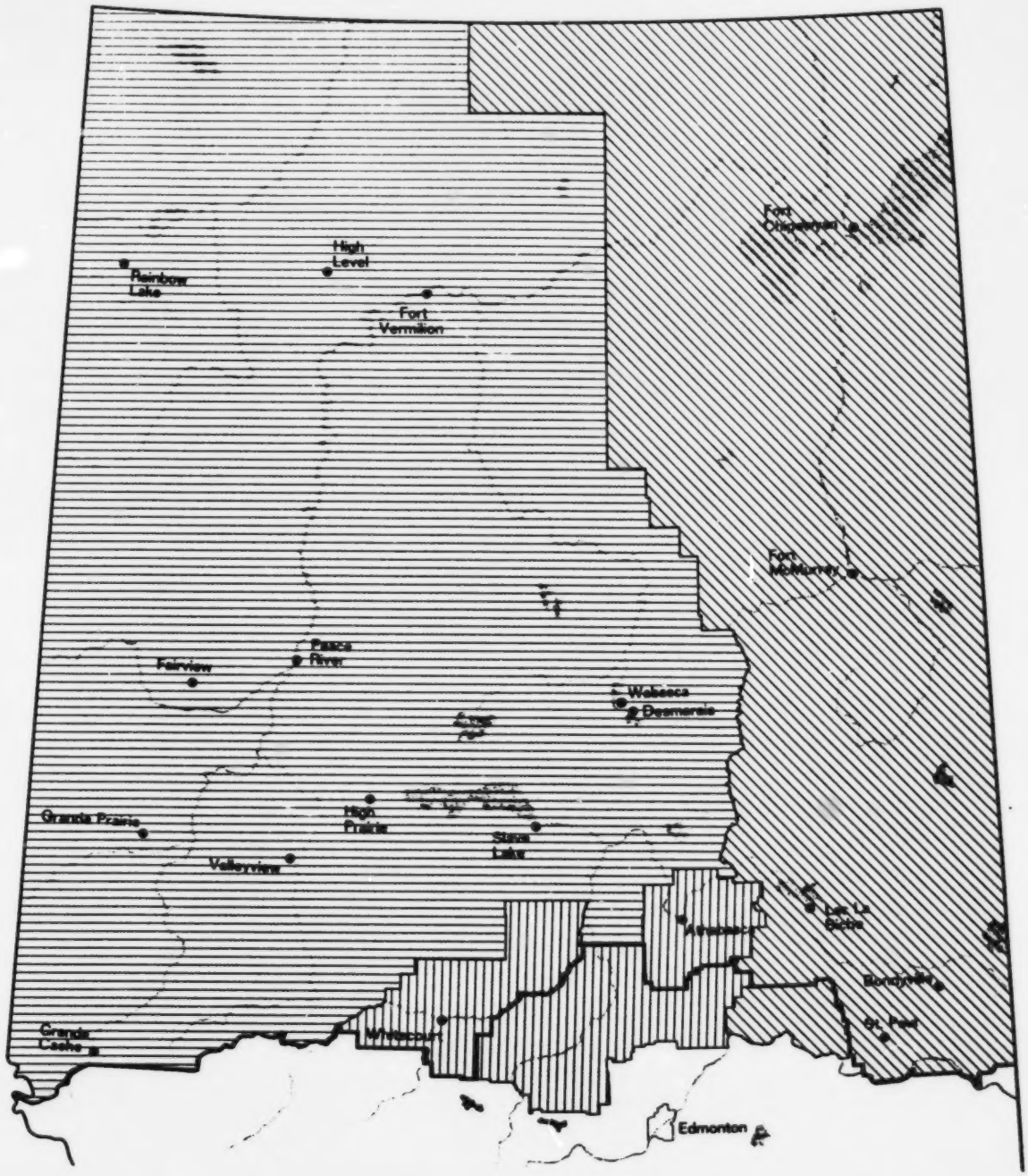
Apprenticeship trades programs were not included since training assistance for apprentices is provided by another plan.

Northern Alberta was defined as the area including and north of Grande Cache - Whitecourt - Athabasca - St. Paul - Frog Lake. The NADC area is geographically defined as consisting of Census Division (C.D.) 12 (excluding County 13), County 12 and Improvement District 15 in C.D. 13, and all of C.D. 15. (Figure 1)

1.6 Organization of the Report

The following chapters include Methodology, the Government Agency Survey, the Manpower Survey, the Post-Secondary Institution Survey, Synthesis of Data Sources and Recommendations.

Under separate cover, the refined Manpower Survey instrument, guidelines for its future use and interpretation of the results are presented.



NORTHERN ALBERTA DEVELOPMENT COUNCIL AREA

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Census Division 12 Census Division 13 Census Division 15

2. Methodology

This chapter presents the approach to the study, and the methodology followed for the Manpower Survey, the Government Agency Survey, the Post-Secondary Institution Survey and the synthesis of the survey results.

2.1 Approach

The approach used in this study was to collect as much information as possible directly from employers as to their future employment needs. Concurrently, government agencies that make major policy decisions affecting the economic climate in which employers conduct their business were contacted for future projections of projects that would affect employment needs. Post-secondary institutions offering professional training to northern students were also contacted regarding employment opportunities for their graduates.

The data collected from these three sources were then reconciled and a priority listing of highly qualified manpower needs for Northern Alberta was developed.

2.2 Government Agency Survey

Up-to-date projections of economic developments and descriptions of current economic conditions for Northern Alberta were obtained from government sources. Government officials in 19 Provincial and Federal government departments were contacted by telephone and eight individuals were interviewed in person regarding reports or specific information pertaining to future manpower needs or economic developments in Northern Alberta. The main sources of information on manpower or economic conditions were: the Alberta departments of Energy & Natural Resources, Housing, Manpower, Social Services & Community Health, and Tourism & Small Business (Northern Development Branch) and the federal departments of Employment & Immigration Canada, and Statistics Canada.

Recent government reports, trade journals and research reports, including university graduate work, were reviewed.

Local agencies in the region (such as a regional planning commission or regional office of a government department) were not contacted in this task area. While this study was in progress, the NADC was also studying "Economic Development Opportunities in Northern Alberta." That project was gathering considerable information from direct interviews with agencies, employers and people in Northern Alberta, and from personnel in government and industry head offices elsewhere in the Province. This study did not contact individuals listed for interviews in the other project.

2.3 Manpower Survey

A scenario approach was used in designing the Manpower Survey. Respondents were asked to report the number of openings anticipated for 1986 and 1987 for a "No Major Change Scenario" first. These openings would depend mainly on retirements and normal labour force turnover. Openings were to be reported by Job Title, whether or not a degree or diploma was required and the specialization needed. A list of eligible degrees and diplomas was supplied based on programs offered in northern post-secondary institutions, the Northern Alberta Institute of Technology, and the University of Alberta. The list was not exhaustive but enabled most respondents to specify their needs for post-secondary training of employees.

Respondents were asked to limit the openings projected to those that could be filled by a new graduate, that is, one without follow-up work experience. They were also asked to mark any positions they anticipated having great difficulty in filling.

The option to complete a second and third scenario was offered. The respondent was asked to briefly describe any project expected to begin or close down in the region, its general location, the year the change was expected to begin or come into effect, and increased manpower requirements expected to result from the change. Where there were two independent developments anticipated, projected employment needs were to be reported in separate scenarios.

The survey instrument for collecting projected manpower

needs was developed and refined in three stages: Pretest, Data Collection I and Data Collection II.

2.3.1 Pretest

A draft survey was reviewed by members of the Northern Development Branch. The survey was then pretested in Grande Prairie with five local small businesses, a school superintendent, the hospital chief administrator and members of the Chamber of Commerce.

Based on the pretest an additional item was added to the survey asking for information on recent positions filled by the employer, one of the two alternate formats for reporting scenario information was selected, more space was added for responses, some wording was clarified, and some additions were made to the list of diplomas and degrees. In addition valuable information was gained on the difficulty in predicting manpower needs even six months in advance in contracting, electrical, welding and oilfield servicing small industries. Very few highly qualified manpower positions existed in these types of business.

2.3.2 Data Collection I

A List of Employers to be included in the survey was developed in consultation with members of the Northern Development Branch. The List was based on sectors known to be major employers (school districts, hospitals, government offices and major industries) and a cross-section of businesses selected from local telephone directories.

A request for referrals to the five major employers (aside from schools, hospitals and government) in their area was sent to 29 Chambers of Commerce and 30 Counties, Improvement Districts and Municipal Districts.

Data Collection I surveys were sent to 30 local employers, 16 employers whose major offices were in Edmonton or Calgary, and the 27 largest municipalities in the study region. Telephone follow-up was carried out with half the respondents who reported positions and one-third of those reporting no positions to clarify written answers and to ascertain that the survey was

collecting the information it purported to collect. Telephone contact was also made with half the non-respondents. The majority of these had no positions to report.

2.3.3 Data Collection II

Based on the responses to Data Collection I, some clarification was added to the scenario instructions in the survey. The edited survey was then mailed to the following 184 employers:

Hospitals (all)	34
School Superintendents (all)	28
Provincial Gov't Departments	24
Referrals from Data Collection I	26
Local Businesses	21
Federal Gov't Offices	10
Health Units (all)	6
AADAC local units (all)	5
Native Friendship Centres (all)	9
Fam & Com Support Services (all)	5
Libraries	6
Colleges	5
Misc	5
Total	184

Telephone follow-up calls were placed to one-third of the respondents who had not submitted a return. Many of these had vacancies to project but required more time to collect information for the survey.

Background information including employment projections for a number of major resource industry projects was supplied by the Alberta Manpower Planning Secretariat. Personal interviews were conducted with recruitment managers of eight major industries in Grande Prairie, Peace River, Slave Lake, Fort McMurray, Edmonton and Calgary. Telephone interviews were conducted with recruitment managers of five major industries in Spirit River, Grand Centre, Bonnyville and Fort McMurray.

The data collected in both Data Collection I and II were

combined and then tabulated for each respondent by region and scenario. Rates of return and the results from the survey are presented in the following chapter.

2.4 Post-Secondary Institution Survey

The vice-presidents for instruction (or their counterpart) were contacted by telephone at Fairview College and Lakeland College, and for personal interviews at Grande Prairie Regional College, Keyano College and the Northern Alberta Institute of Technology. Information was sought on sources of employment for graduates of the institutions and methods used to collect employment information.

2.5 Synthesis of Survey Results

Scenarios within which employers projected manpower needs were reconciled with projections for economic development and current and recent information on professional positions filled. A priority listing for highly qualified manpower was generated based on the information gathered in the study.

2.6 Summary

The methods used to collect highly qualified manpower projections from 270 employers, most of whom were in Northern Alberta, were described. Government agencies who were contacted for reports and projections regarding economic developments in Northern Alberta were listed. The approach to five post-secondary institutions for information on follow-up of graduates into the job market was outlined. Plans for synthesis of the data collected in the study were presented.

3. Government Agency Survey of General Economic and Employment Conditions

3.1 Introduction

This chapter includes an integration of information obtained from the government agency sources, both through interviews and from reports, as well as a review of selected literature from other sources, such as newspapers, trade journals, and research reports. Time restrictions limited the data collection to readily available reports and information easily provided by government personnel.

The remainder of the introduction clarifies the nature of the information collected. The following two major sections of this chapter review economic conditions and then general manpower (or employment) conditions. Each section discusses conditions at the national, provincial, and regional level.

3.1.1 Obtaining Manpower and Economic Information

Very few government agencies collect manpower information. The sources for employment data and general knowledge of employment conditions were Alberta Manpower, Statistics Canada, Employment and Immigration Canada (EIC), and the Alberta Health and Social Services Disciplines Committee (AHSSDC), which represents four Alberta government departments. With some of this information it was not possible to disaggregate data to a regional level; for example, current economic or manpower models analyze and predict only at a provincial level.

We were able to obtain two recent general reports on economic conditions in northern Alberta; these were two profiles on the Grande Prairie and Fort McMurray regions (Alberta Manpower, 1984a, 1984b). EIC has recently prepared a report titled "Alberta/NWT Labour Market Outlook" which reviews the general Provincial economy (EIC, 1985).

A few government department contacts were able to provide some information which was readily available; however, nearly all contacts indicated little specific economic information was available for Northern Alberta. The departments of Transportation, and Public Works Supply and Services informed us

information remains confidential until a project is announced publicly and goes to tender. Also, the deliberations of an inter-departmental committee on the provincial economy are considered confidential and are not publicly released.

3.1.2 Boundaries

Geographical boundaries established by different agencies for data collection cause difficulty in comparing information. In some cases the data is available only for the province as a whole; often, a particular report, while containing little actual data, describes the situation only at the provincial level.

Statistics Canada produces information for the C.D.s. Statistics Canada also produces information for economic regions: economic region 880 consists of C.D.s 12 and 10 (south of C.D.12); economic region 870 is the same as C.D. 15, while region 840 consists of C.D.s 13, 14 (south of C.D.15) and 9 (along the Rocky Mountains). (These economic regions were defined in 1981.) The regional profiles prepared by Alberta Manpower in 1984 described these economic regions: region 87, is the same as C.D. 15; and region 88 consists of C.D.s 12 and 13. (Future Manpower reports will follow the current Statistics Canada economic boundaries.)

The AHSSDC prepares reports for Census Districts and Social Services Regional areas. The Northeastern Social Services Region consists of C.D. 12 and parts of C.D.s 10 and 13; the Northwestern Social Services Region consists of C.D. 15 and the rest of C.D. 13. In addition, EIC has Canada Employment Centres in several communities in northern Alberta: data are gathered for these centres and reported on that basis.

Data from different sources were not adjusted to correspond to the NADC boundaries. Consequently, these data sources will generally approximate the data to be expected for the NADC region.

3.1.3 1981 Census

Census information is perhaps the most comprehensive source of data concerning employment and educational levels. The 1981 national census is the last one available with this information. Because economic conditions changed so abruptly in 1981/82, we have not included this historical information in this report.

3.1.4 Surveys and Highly Qualified Manpower

Highly qualified manpower is not identified as such in the general data collections systems. The most comprehensive survey (other than the census) which focuses mainly on highly qualified manpower is the AHSSDC annual survey of health and social service personnel. Other surveys of occupations or industries regarding employment data do not identify highly qualified manpower.

3.1.5 Forecasting

Economic forecasts are made on the basis of many factors which are uncertain, such as interest rates, world oil prices, national debts and currency values. These economic projections vary from agency to agency, and the time frame is relatively short, usually one or two years into the future. These forecasts are discussed in the Economic Conditions section 3.2 which follows.

General employment and unemployment forecasting is done on a provincial basis, as well as at a national level. Considerable caution is now exercised with these forecasts, however, as the recession severely altered the forecasts being made in the late 1970s. (One professional association which, in the 1970s, made employment projections for graduates several years in advance now refuses to do any forecasting.) The general employment forecasts are made for only one or two years into the future with any degree of confidence. Only two recent studies that forecast specific manpower needs were identified and these are discussed in the Employment Conditions section 3.3.

3.2 Overview of Economic Conditions

In this section economic issues at the national, provincial and regional level are reviewed. Little systematic collection of data specifically on northern Alberta goes on in any agency. This situation seems to have changed little since 1981 when the "Socio-Economic Overview of Northern Alberta" was produced (NADC, 1981). Enquiries to most provincial government departments failed to obtain any detailed information in regular or special reports. General information appears regularly in the press, but very little refers to northern Alberta, except to mention special projects, such as oil sands plants. The general content of this section, therefore, is based mainly on reports of the Conference Board of Canada, Employment and Immigration Canada, and Alberta Manpower. Information in this section is current to mid-March, 1985.

3.2.1 The Canadian Economy

The major forces affecting the Canadian economy relate to interest rates, world oil prices, the national debt, international trade, the value of the Canadian dollar, and the economy of the United States. The Canadian economy is now in a state of recovery from the recession of 1981/82, although the short term outlook for continued stable growth is uncertain. A review of Gross National Product projections suggests the economy should expand by about 2.5% in 1985 and about 3% in 1986. This is down from the 4.8% experienced in 1984. (GNP forecasts vary considerably, and recent predictions are: Conference Board, 2.4% in 1985 (in the summer of 1984 it predicted a 0.2% contraction during 1985); Dominion Securities Pitfield, 3%, Data Resources, 2.2%; and Infometrica, 2.4%.). Employment and Immigration Canada has suggested a slow upward trend in interest rates during 1985/6 (EIC, 1985).

The world price of oil is very dependent on the stability of the OPEC cartel, and recent prices have been set at $28.65 US. The Bank of Montreal predicted on January 25, 1985 that oil prices may decline $1-1.50 US during 1985, whereas on the same day First Marathon Securities was suggesting a drop of as much as 20% in the same time frame. Modest reductions in oil prices are not expected to harm Alberta, however a sharp reduction of 20% or

more could put many of the non-conventional projects in jeopardy.

A major uncertainty facing Canada relates to growth in the American economy, which has helped to sustain the Canadian recovery. Employment and Immigration Canada recently suggested interest rates in the U.S. could rise during 1985/86, and as a result, slow economic growth there could be halted in mid-1986 (EIC, 1985). Also, the huge American debt is causing concern among American economists who are now predicting a mild recession beginning in 1986. If this does occur, Canada's growth can be expected to slow somewhat from the low rate now being predicted.

3.2.2 The Alberta Economy

Alberta's growth rate contracted more than that of several provinces during the recession because boom conditions had existed for several years. Alberta is now beginning to recover, although more slowly than some provinces. As with the forecasts for Canada, the predictions for the province are not uniform from organization to organization. Table 1 indicates the January forecasts by the Conference Board (1985), the Royal Bank (1985a) and Alberta Treasury (Alberta Manpower, 1985a). At the same time, the Bank of Montreal was predicting a 2-2.5% growth in 1985. More recent estimates for the provincial growth rate are 0.3% in 1984 and 2.1% in 1985, and for the unemployment rate, 10.5% in 1985 (Edmonton Journal, February 5, 1985). Also, a later estimate from the Conference Board predicts growth at 2.1% for 1985 (Conference Board, 1985b). General expectations for the near future (from 1985 to 1988) are for growth to be about 2.3% annually.

At the provincial level, the major signs of economic recovery are appearing within the energy sector. Oil company revenues are increasing, and Alberta land sales, a key indicator of industry health, are at the highest level since pre-National Energy Plan days. The construction industry was hit hard, however, and is not expected to show signs of recovery until 1986/87. Construction for housing is now predicted to be above the estimated 6,500 starts in 1984, with the following forecasts being given: 7,700 (an economic consultant); 10,000 (Alberta Housing); and 10,000-15,000 (Bank of Montreal). Housing construction is expected to be most active in northern Alberta.

Table 1

Estimates of Provincial Growth Rate and Employment

Indicator	Confer.Bd.		Royal Bank		Alta. Treasury	
	1984	1985	1984	1985	1984	1985
Real Domestic Product*	-0.4	1.2	2.1	1.0	0.0	2.5
Employment*	-0.3	0.3	-0.4	1.0	-0.1	0.9
Unemployment (%)	11.4	12.4	11.1	10.4	11.2	11.1

Source: Conference Board (1985a); Royal Bank (1985); Alberta Manpower (1985a). All estimates were made in January, 1985.

* % change from the previous year.

because of energy industry activity.

3.2.3 Northern Alberta

The economy of northern Alberta has been very dependent on the use of its energy, forestry, and agricultural resources. As a resource intensive region with a small population base it is dependent on outside demand for its products. It also is directly affected by fluctuations of the external markets, and the effects are magnified when the region's economy is so heavily dependent on a single industry.

The characteristics of northern Alberta limit its attractiveness as a location for manufacturing industries. It is distant from any sizeable market, which increases transportation costs, the small population creates a small indigenous market, and it has a lower skilled resident labour force. In general, there are no major factors (other than the availability of natural resources) which would favour a location in northern Alberta over any other in the Province. Diversification of the economic base in the near future is highly unlikely, given the present conditions which favour increased energy industry

activity, and for which the long-term outlook (in terms of resource availability) is very good.

3.2.3.1 The Eastern Region of Northern Alberta

The eastern region (here considered as C.D.12 and the east half of C.D.13) has developed a somewhat different economic base than the western region. The major difference is the existence of larger oil sands and heavy oil deposits in the east; these deposits will account for more energy activity in the future. Agriculture contributes significantly to the economy of this area, especially in the southern part of the region.

In the early 1980s major industrial projects were expected to give the region a great economic boost: three oil sands or heavy oil mega-projects were expected near Ft. McMurray and Cold Lake. All of these plans were cancelled during the economic downturn. Industrial activity in the energy sector has generally been revived; as indicated by the list in Tables 2 and 3, there are indications that large projects are again being considered. The following four energy projects are being examined:

* The ESSO in-situ heavy oil plant at Cold Lake, which is being built in stages, could eventually become a mega-project.

* Petro-Canada has been reported to be looking for partners in a $4 billion oil sands plant to extract 70,000 barrels per day (Edmonton Journal, January 11, 1985). Four thousand construction workers and three thousand operating personnel could be employed at this plant.

* Syncrude is examining the feasibility of another expansion (beyond the present $1.2 billion expansion) which could cost $4 billion (Edmonton Journal, March 21, 1985).

* Gulf Canada is also examining the feasibility of a 40,000 barrel/day plant, estimated to cost $1.5 - 2 billion.

Table 2

Resource Industry Projects in Northern Alberta, as of February, 1985

A. Major Resource Projects (Over $20 Million)

Company	Location	Cost ($ million)	Workforce cons[1]	Workforce oper[2]	Status
Oil and Gas					
ESSO	Cold Lake	725	560	200	ongoing[3]
Suncor	Ft.McMurray	355	350(ave)		ongoing
Suncor	Ft.McMurray	500	1,100my[5]		starting
Dome	Primrose Lake	350	225	210	planned[4]
ESSO	Primrose Lake	30			ongoing
AOSTRA	Ft.McMurray	24	90		ongoing
Syncrude	Ft.McMurray	1,200	1,700		ongoing
Union Oil	Ft.McMurray	35		30	ongoing
BP	Wolf Lake	200	450	125	ongoing
AEC	Primrose Lake	40	75	15	complete
ESSO	Cold Lake	40			complete
Murphy Oil	Lindbergh	33	90	30	starting
AOSTRA	Ft.McMurray	22			ongoing
Home Oil	Swan Hills	105	250		ongoing
Shell	Peace River	200	540	115	starting
AMOCO	Elk Point	50	70	40	ongoing
ESSO	Swan Hills	125	350	12	ongoing
Dome	Lindbergh	300	50	265	planned
Cdn.Occid.	Mantoken	23	20	7	planned
Canterra	Keg River	50			ongoing
Cdn. Hunter	Elmworth	20	35		ongoing
Shell	Grande Prairie	30		25	ongoing
Sulpetro	Grande Prairie	30	75	8	ongoing
Chevron	Kaybob	35			planned
Dome	Wembley	55	250		planned
Amoco	Gregoire Lake	40			ongoing
Suncor	Fort Kent	75			ongoing
Dome	Lindbergh	26			ongoing
Forestry					
AEC	Blue Ridge	25			ongoing

Table 2 (cont'd)

Resource Industry Projects in Northern Alberta, as of February, 1985

B. Heavy Oil and Oil Sands Plants (Under $20 Million)

Company	Location	Cost ($ million)	Workforce cons	Workforce oper	Status
Gulf	Desmarais				ongoing
Union Oil	Buffalo Creek				ongoing
Canterra	Kearl Lake				ongoing
Texaco	Ft.McMurray				ongoing
Petro-Can	Primrose Lake				ongoing
AEC	Ipiatuk Lake				ongoing
Dome	Moore Lake				ongoing
BP	Marguerite Lake	20		31	ongoing
Bow Valley	Marie Lake	15			ongoing
Drummond Oil	Ardmore				ongoing
Chevron	Beaver Crossing	12			ongoing
Cdn. Occid.	Lindbergh	7			ongoing
Hudson's Bay	Prairie Lake				ongoing
Westmin Res.	Lindbergh	8			ongoing
Dome	Lindbergh				ongoing
Pan Canadian	Lindbergh	11			ongoing
Cdn.World Eng	Charlotte Lake				ongoing
Koch	Fort Kent	7			ongoing
Albion	Bonnyville				ongoing
Amoco	St. Lina				ongoing
Mobile	Wolf Lake				ongoing
BP	Marguerite Lake	2			ongoing

Source: Planning Secretariat, Alberta Manpower

[1] peak construction workforce
[2] operational workforce
[3] already in construction or operational
[4] submitted for approval
[5] man-years

Table 3

Enhanced Oil Recovery Projects in Northern Alberta

Approved	
Amoco South Swan Hills - Main	Amoco South Swan Hills - West
Amoco Ante Creek BHL Unit 1	Canterra Rainbow I.S. #1
Mobile Rainbow I.S. #	Amoco Rainbow S. Keg River 'B'
Canterra Rainbow Keg River 'B'	Amoco Nipisi Gilwood 'A'
Esso Judy Creek BHL 'A'	Home Swan Hills BHL 'A' and 'B'
Esso Judy Creek BHL 'B'	Mobil Rainbow Keg River '11'
Hudson's Bay Kaybob S.	Esso Rainbow Keg River '1'
Chevron Mitsue Gilwood 'A'	
Awaiting Approval	
Gulf Goose River BHL 'A'	
Expected*	
Amoco Ante Creek North West	Esso Rainbow Keg River 'CCC'
Esso Rainbow Keg River 'S'	Esso Rainbow Keg River 'K'
Gulf Snipe Lake BHL	Swan Hills 'A' & 'B'
Chevron Mitsue Gilwood 'A'	Chevron Kaybob North BHL 'A'

Source: Economic Planning and Financial Analysis Branch, Alberta Energy and Natural Resources

* Expected projects have not yet been submitted for approval.

As happened elsewhere in Alberta, the construction industry was hard hit by the recession: the value of building construction decreased from $206,528,000 in 1981 to $58,835,000 in January - September of 1983. With increased activity in the energy sector, construction is expected to pick up; towns such as Cold Lake, Grand Centre, Bonnyville, and Elk Point expect housing requirements to increase in the near future. Between 600-800 families are expected to move into the Cold Lake-Grand Centre-Bonnyville region within the next three to four years. Some of this expected population growth will result from expansion of CFB Cold Lake, which injects $100 million annually into the local economy.

Public sector development in the region, other than the expansion of CFB Cold Lake, is ongoing. The hospital at Cold Lake is scheduled to be replaced in early 1986. The Alberta Hazardous Waste Management Corporation is locating a disposal facility near Swan Hills, and construction began in early 1985.

The change in economic activity of various communities is reflected in data from Alberta Housing: apartment rentals in northern Alberta have increased markedly over the past year. The vacancy rate is now very low, as shown in Table 4.

Table 4

Comparative Vacancy Rates for Rental Apartment Units in Selected Northern Alberta Communities

Community	Vacancy Rate (%)			No. Units
	Aug.1982	Aug.1983	Dec.1984	
Bonnyville	31.1	12.7	0.4	331
Cold Lake	25.0	2.3	0.0	88
Ft. McMurray	12.2	12.6	0.4	1,731
Grande Prairie	25.9	22.4	2.2	2,170
Grand Centre	9.2	3.1	3.0	194
High Level	0.0	1.9	0.0	157
High Prairie	7.3	4.6	3.0	145
Peace River	4.8	19.6	7.2	578
Slave Lake	1.6	3.4	0.0	299
St. Paul	13.9	7.3	6.9	271

Source: Alberta Housing, March, 1985.

The Ft. McMurray CEC Area Profile (EIC, 1985b) indicates several construction projects may be forthcoming: the Catholic School Board plans to build a new school and expand three others; the Public School Board plans to build a new high school by 1986 and a new elementary school by 1990; and the hospital may be expanded. The Elk Point Community Impact Study (Elk Point, 1985) indicates the value of residential permits, which averaged about $300,000 in the early 80's, increased to $1,500,000 in 1984, and

that industrial/business permits also increased considerably.

The feasibility of the Slave River hydroelectric dam was examined in the early 1980s (Alberta Environment, 1982). Analysis of the potential need for this dam is still continuing. However, should a decision be made in the near future to build, it would not have an impact on the economy until the early 1990's, when construction could begin.

3.2.3.2 The Western Region of Northern Alberta

Information on the western region (C.D. 15 and the west half of C.D. 13) was not as readily available as for the eastern region. The main source of information for this section is the "Regional Profile for the Grande Prairie Region" (Alberta Manpower, 1984b).

Conventional oil and gas activities have sustained the economic viability of this region for a number of years, with major fields at Rainbow and Zama Lakes. Oil and gas drilling starts of 1,271 in 1984 surpassed the 1980 high of 959 and considerable exploration has been occurring in the region. The Peace River oil sands are now being developed, particularly by Shell with its in-situ extraction plant. Presently, Shell is expanding the plant, at a cost of $200 million, to begin producing 10,000 barrels per day of bitumen in 1986. Shell is also examining an expansion to 40,000 barrels per day in the early 1990's, which would require a permanent workforce of 300.

Agriculture is important throughout a large part of the region. Grain farming is the main form of agriculture in all areas except Valleyview where livestock production provides a significant amount of farm income. Very few farmers are completely dependent on farm income for their livelihood and rely on income from other sources (e.g. forestry, service industry, oil and gas) (NADC 1983a).

Forestry has been important, especially with the pulp and paper mill near Grande Prairie and a forest products plant at Blue Ridge. A forest products plant, such as a pulpmill, may be needed in the Whitecourt region within several years. Although nothing is planned for the near future, a plant might be possible by 1990 if a company decides to go ahead (Alberta Forest Service,

personal communication). Future coal mining operations at Grande Cache are uncertain; there have been numerous layoffs, and the mine is heavily dependent on off-shore contracts for its production.

During this study only one major project, other than oil and gas developments, has been identified for the short term. This is the expansion of the Queen Elizabeth Hospital at Grande Prairie, which is scheduled for completion in 1986. Potential large projects include another pulp mill and the Dunvegan dam (although Alberta Environment advises there are no plans to build the dam in the near future).

3.3 Overview of Employment Conditions

This section integrates background studies on highly qualified manpower in the region, drawing information from a number of sources referred to at the beginning of the chapter. Employment at the local level is interrelated with employment at a provincial and to a certain extent national levels, and information on these other two levels is included here.

3.3.1 National Employment

With the 1981/82 recession, employment levels in all parts of Canada decreased rapidly and have been slowly increasing as the country continues its recovery. In 1981 unemployment in Canada stood at 7.5%; in 1982 it jumped to 11.0% and has since stayed about the same. The spread in unemployment between industries is considerable: in 1984 it was 5.8% in the financial sector, 22.7% in construction, and 24.9% in forestry (construction and forestry have historically been high unemployment industries). The outlook for 1985, according to the Conference Board of Canada, is for continuing unemployment at the 11% level. While employment is expected to grow by 1.5% in 1985, this will be barely enough to absorb the new workers entering the labour force. The unemployment level is not expected to decrease significantly (by more than a percentage point or two) in the next few years.

The expected growth in employment in the 1980s will be through the creation and growth in small businesses with sales of less than $2 million annually or employing up to 50 people. Big

business is expected to stagnate; although the job mix within large firms will change, they are not expected to grow overall. The Canadian Federation of Independent Business predicts small business will employ 6.2 million people by 1990, up from 1.1 million in 1980, whereas big business will remain at 2.4 million, and the public sector will not expand beyond 2.7 million.

3.3.2 Provincial Employment

Alberta's current unemployment rate of 11% is the same as the national level, while during the boom period it was about 4%. Forecasts for the provincial employment picture are:

- Alberta's real domestic product is expected to increase by 2.5% in 1985 and remain about 2% during 1986 and 1987;
- the labour force is expected to grow about 1% annually from 1985 to 1987;
- employment is expected to grow at an average annual rate of 1.5%, 0.5% greater than the labour force;
- unemployment is expected to remain similar to 1984, and decrease slightly thereafter.

(Alberta Manpower, 1985a)

Table 5 shows the labour force projections for Alberta to 1987.

Table 5
Labour Force Statistics for Alberta Projected to 1987

	1984	1985	1986	1987
employment (000s)	1,114	1,124	1,141	1,164
(% change from previous year)	-0.1	0.9	1.5	2.0
unemployment (000s)	140	140	135	129
unemployment rate (%)	11.2	11.1	10.6	10.0

Source: Alberta Manpower Outlook 1984-1987 (Alberta Manpower, 1985a)

In contrast to these projections, Employment and Immigration Canada predicts unemployment will remain constant, and likely creep upward through the 1986/87 period as the labour force growth outpaces employment growth (EIC, 1985a). EIC's predictions are based on the following analysis:

- with out-migration and demographic change, Alberta's working age population declined in 1984/85, but growth in this population is expected in 1985/86;
- participation rates in the labour force are expected to increase, due to an increase in the participation of women;
- labour force growth will resume in 1985/86;
- employment will grow with the onset of recovery in the Alberta economy in 1985/86.

EIC predicts employment to range from 1,119,000 to 1,123,000 in 1985/86 and 1,130,000 to 1,134,000 in 1986/87, due mainly to increased activity in the oil and gas industries. These predictions are conditional on a moderate economic outlook; high inflation or high interest rates will affect the final outcome.

3.3.3 Outlook by Industry Sector for the Province

Because certain statistics are not available for northern Alberta, provincial data are presented here as an indication of the current or potential situation in the north. This section is based on a provincial analysis by EIC and by Alberta Manpower.

3.3.3.1 Goods Producing Industries

Agriculture--In contrast to other industries, agricultural employment increased in 1983/84 by 8.8% over 1982/83, and is expected to have increased by 8.5% in 1984/85. Little growth is expected beyond 1984/85 as the capacity to absorb labour will have been exhausted. Employment is expected to fall again, due to competition from other expanding industries, and from a structural change as farms are amalgamated.

Primary Industries (Oil, Gas, Coal, Forestry)--Employment in the oil and gas industry will increase with the expected improvement in drilling, oil sands, heavy oil, and enhanced oil recovery operations. In 1983 the oil and gas industry employed 102,539 people in 2,808 firms (Alberta Manpower, 1974c). A survey of these firms (the response rate was 76%) indicated the following employment levels for occupational categories consisting mostly of highly qualified manpower (the data are not available on a regional basis). (See Table 6.)

Table 6

Employment of Managers, Engineers and Scientists in the Oil and Gas Industry, 1983

Employment by Occupation	Employees*	%
managerial and related	11,734	13.0
engineering	6,228	6.9
other sciences	6,769	7.5
	24,721	27.4
total number employed	90,263	100.0

Source: Alberta Manpower, 1984c.

* the number of employees in firms responding to the survey

No significant employment changes are expected in the metallurgical coal sector, although thermal coal production should increase somewhat if several proposed projects proceed. Forestry is expected to remain stable.

Manufacturing--Manufacturing in Alberta is based mostly on upgrading of agricultural and natural resources. Manufacturing employment is not expected to grow significantly, and any growth will be mainly in the petrochemical industry. Diversification of manufacturing into new areas is not expected in the medium term.

Construction--Construction employment fell drastically with the recession, falling 20% (a loss of 20,000 jobs) in 1983/84 and a further 20% in 1984/85. Little improvement is forecast for this year, although improved conditions should begin in 1986/87. The main area of increased activity will be in the oil and gas industry.

3.3.3.2 Service Producing Industries

Transportation, Communication and Other Utilities--Employment in the transportation industry has fallen from the 1980/1 level and may improve slightly in a few years. The communication industry will continue to diversify and will be the strongest growth sector of this group. No change is expected in utilities until later in the decade as the Sheerness and Genesee power plants, which have been postponed, resume construction.

Trade--Sales personnel and staff in the trade industry should increase in line with general economic recovery as retail and wholesale purchases pick up.

Finance, Insurance and Real Estate--As with several other industries, there was a reduction in available positions, particularly during 1983/4. This industry now appears to have stabilized, but is expected to remain at current levels for about two years.

Community, Business and Personal Services--This sector is the only one that grew throughout the recession: in 1983/4 there were 353,000 employed, which was 31.6% of the labour force, compared to 27.7% of the labour force in 1980/1. This sector is expected to remain relatively constant in the mid-term, a result of slower population and economic growth.

Public Administration--Government was slower than the private sector to react to the recession and has now entered a period of restraint. Total employment in public administration was reduced to 83,000 positions in 1983/4 (a reduction of 1.6% from 1982/3) and is not expected to grow in the short term to 1987.

3.3.4 Labour Market Analyses for Alberta: Research and Models

There is some information available from various sources to develop an understanding of highly qualified manpower demand at the provincial level. This section provides some background information on the work to date.

3.3.4.1 The Relationship Between a University Education and the Labour Market in Alberta

The relationship between labour market needs in the 1970s in Alberta and the entry of university students into the labour force was analyzed by M. L. Westbury (1982). The author found that a complex relationship exists between the number of graduates entering a particular field and the current demand for people in that field. One factor is strongly related to a potential graduate's perception of opportunities in any field. This perception will influence the individual's decision to begin a period of study, during which time labour market conditions may change.

Westbury was advised by a senior federal government official that more difficulties exist in forecasting demand for highly-qualified jobs than in forecasting for low and medium skilled occupations. Only in limited specialties might the information exist to provide reasonable estimates.

Supply and demand for the study was obtained from two sources. Labour demand information for specific occupations was obtained from COFOR, the Canadian Occupational Forecasting program; student entry into the labour force was determined by the number of graduates from Alberta universities. During 1975-1980, the period studied, employment in Alberta was increasing annually by 4.8% (in 1980 it was projected to average 4.9% during 1980-1985). In this five year period an annual average of 8,000 graduates from Alberta universities competed for 14,000 managerial and professional jobs created annually, as well as for similar jobs vacated through normal attrition. Opportunities were excellent for new graduates at that time.

Even under these favourable conditions, increased job opportunities did not appear to attract additional students into the areas where large shortages were apparent. There was no

direct and consistent relationship between enrolments in a particular field and the demand for that occupation in the labour market. In several fields, particularly chemistry, physics, and sociology, the level of enrolment did not relate to the estimated shortages or surpluses in the market. Nevertheless, there was some evidence students did respond to perceived increased job opportunities in some fields. In fields like medicine, law, and engineering, there had been an obvious shift toward increased enrolments. These fields have historically enjoyed numerous job opportunities and high wages.

In addition to the above study, a project beginning in 1985 at the University of Alberta (G. Lowe, Department of Sociology) will track 1,500 high school and university graduates for two years. Alberta Manpower has provided the funds for initial phases of the study. While the interest is in the experiences of recent graduates in the current high unemployment situation, relevant information on decisions made while in university will be obtained.

3.3.4.2 Canadian Occupational Projections System (COPS)

The COFOR program mentioned above is no longer used by Employment and Immigration Canada. The model has been replaced by the Canadian Occupational Projection System (COPS), but COPS has not been developed sufficiently to provide data for this study. As a model developed for use at the federal level, it will provide manpower projections only at the provincial level, and cannot be used for specific regions such as Northern Alberta. The model is ambitious, and will generate apparent imbalances between demand and supply for periods of three to ten years. On the demand side, projections will be provided by year, industry, province and occupation. It will also use different scenarios, based on variations in economic activity, in an attempt to avoid focusing on only one possible future.

3.3.4.3 Manpower Demand Model for Alberta

Alberta Manpower uses the Manpower Demand Model to forecast occupational employment levels up to five years into the future. Forecasts are developed in the following way. An overall employment forecast for Alberta is prepared by several government

departments. This is used by Manpower to forecast employment in the 37 major industries in the Province. The Model contains ratios of occupations by industry, which are based on those ratios existing at the time of the 1981 census. The Model converts the industry projections into employment levels for each occupation.

As with any model, this one has limitations; in particular, current occupational ratios may be different than they were in 1981 due to the ensuing recession. Additionally, the model can only forecast occupational levels for the Province as a whole, and not at a regional level.

3.3.5 Northern Alberta

3.3.5.1 Population Projections

In 1984 the Alberta Bureau of Statistics produced a revised series of three population projections for Alberta. Population growth is projected to increase at lower annual growth rates for the next 15 years than in the past decade due to lower migration assumptions. The projections for census divisions 12, 13 and 15 are presented in Table 7.

The projected growth rate of 2.4% for C.D. 12 is the highest of any growth rate in the province. Under Series A, the population growth for C.D. 12 from 1985 to 1987 would be 3,400; for C.D. 13, with a projected growth rate of 1.1%, it would be 1,200 and for C.D. 15, with a projected growth rate of 1.2%, it would 4,400.

Table 7

Estimated and Projected Population

Census Div	1983 Est. Popul.	Series A Projected Population 1985	1987	1990
12 (Fort McMurray)	90,300	93,900	97,300	104,300
13 (Whitecourt)	55,900	56,900	58,100	60,100
15 (Grande Prairie)	136,900	139,200	143,600	149,800

Source: Alberta Treasury Bureau of Statistics. Alberta Census Division Population Projections Update 1984-1998. October 1984.

3.3.5.2 Recent Conditions in Northern Alberta

The recession has had an impact on labour conditions in the region, similar to the impact on the province. Certain industries and occupations have been affected as much as elsewhere, but there are obvious regional differences that can be identified. There is also evidence that the eastern region is experiencing somewhat different conditions than the western region, due largely to the different resource base.

The most recent published information on employment is contained in two regional profiles prepared by Alberta Manpower in 1984. The following two paragraphs present relevant data.

In the Fort McMurray region (C.D.'s 12 and 13), employment remained at the same level during 1980 to 1982 (Alberta Manpower, 1984a). At the same time the labour force grew moderately, increasing the unemployment rate to about 8% annually. In 1984, the unemployment rate was 7.8%.

In the Grande Prairie region (C.D. 15) the different

resource base creates a higher seasonal employment variation than elsewhere: during 1982 and 1983 unemployment was 10% in the winter and 5-7% in the summer. In 1984, the labour force was 59,000 and the unemployment rate was 7.0% averaged over the year.

EIC is currently preparing a series of area profiles for their Canada Employment Centres (CEC). The Fort McMurray CEC area profile has been released, while others are being prepared for several centres, such as St. Paul and Grande Prairie in the NADC region. These profiles, as they are released, will provide general information on employment in northern Alberta. The most recent data given in the Ft. McMurray area profile, and directly related to highly qualified manpower, is from the 1981 Statistics Canada census.

Canada Employment Centres regularly gather data on registered job vacancies. Because these centres are not used as extensively to register professional occupations, compared to the use for trades and other occupations, this data will underestimate total vacancies. Short of actually surveying employers, the centres are the only regular source of information on vacancies for several occupations. However, the data are available only for broad occupational categories (teaching, medicine and health, etc.) and are not suitable for comparison with the current survey data.

Health and Social Services Employment--The most comprehensive set of data available for any highly qualified manpower category is provided by the Alberta Health and Social Services Disciplines Committee (AHSSDC). The AHSSDC represents the departments of Social Services and Community Health, Advanced Education, Manpower, and Hospitals and Medical Care. Each year the Committee surveys all health and social service professions in Alberta for employment, vacancies and turnover. Projections of future demand have not been requested in the survey. Recent summaries of the data have been prepared for Social Services Regions; the two which include the NADC area are the Northwest Region (C.D. 15, excluding Grande Cache, but including part of C.D. 13) and the Northeast Region (C.D. 12, part of C.D. 10, including Lloydminster, and part of C.D. 13).

Surveys were carried out twice a year until 1984 and now are carried out only once a year in March. The last full survey was in September, 1983; the March, 1984 survey did not obtain

information about dental, eye care, pharmaceutical and psychological personnel in private practice. Tables 8 and 9 include the data collected in March, 1984 for a selection of health care positions in the Northeast and Northwest Regions, respectively.

Table 8

Vacancy Rates for Health and Social Service Personnel in the Northeast Social Services Region of Alberta for March, 1984

Manpower Groups	No. of Positions[1,2]	No. of Vacancies
Addiction Counsellor	23	2
Combined Lab & X-Ray Tech	27	0
Dietary Tech	9	1
Dietitians	7	0
Health Record Tech	21	0
Life Skills	11	0
Medical Lab Tech	52	1
Medical X-Ray Tech	26	0
Occupational Therapist	5	3
Physiotherapist	19	3
Recreation Therapist	5	1
Public Health Inspector	11	1
Respiratory Tech	4	2
Registered Nurses (all)	675	9
Registered Nursing Ass't (all)	206	0
Speech Therapist	11	0
Social Services Dip	11	1
Social Workers BSW	53	3

Source: Alberta Social Services and Community Health, 1984.

[1]Full Time Equivalent Positions
[2]Does not include dental, eye care, pharmaceutical or psychological personnel.

Table 9

Vacancy Rates for Health and Social Service Personnel in the Northwest Social Services Region of Alberta in March, 1984

Manpower Groups	No. of Positions[1,2]	No. of Vacancies
Addiction Counsellor	27	1
Combined Lab & X-Ray Tech	23	0
Dietary Tech	18	0
Dietitian	6	0
Health Record Tech	21	0
Life Skills	12	0
Medical Lab Tech	49	4
Medical X-Ray Tech	23	1
Occupational Therapist	6	2
Physiotherapist	15	3
Recreation Therapist	5	1
Public Health Inspector	11	0
Respiratory Tech	8	3
Registered Nurses (all)	557	53
Registered Nursing Ass't (all)	234	16
Speech Therapist	7	1
Social Services Dip	12	0
Social Workers BSW	45	3

Source: Alberta Social Services and Community Health, 1984.

[1]Full Time Equivalent Positions
[2]Does not include dental, eye care, pharmaceutical or psychological personnel.

Engineers, Geologists and Geophysicists--The Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA), has provided a listing of the numbers of members registered in various branches in Alberta. Table 10 indicates the changing registration from 1983 to 1985 for the two regions in northern Alberta. These regions do not include Grande Cache, Whitecourt, Swan Hills, or Cold Lake and south. The increase in membership in these years is indicative of the greater industrial activity in the area.

Table 10

Membership in Fort McMurray and Peace River/Grande Prairie Branches of APEGGA

APEGGA Branch	1983	1984	1985
Fort McMurray	287	375	438
Peace River/Grande Prairie	154	141	162

Source: APEGGA (personal communication, March, 1985).

Available Manpower--A limited review of data on available manpower was conducted to identify any trends related to specific job groupings. Interpreting the information in terms of available diploma and degree programs at post-secondary institutions was necessary. It was taken into account that there may be structural factors that preclude some people from working.

Degree programs for which the unemployment data trends showed a need for manpower in the study region included Chemical Engineering, Electrical Engineering, Mechanical Engineering, Mining Engineering and Physical, Occupational and Speech Therapy; diploma programs where a need was indicated included computer systems and library technicians.

Programs for which the available manpower data trends showed an excess in the study region included a Commerce degree, Civil Engineering, Elementary Education degrees without specializations, and library degrees. There was a trend towards excess supply of social services and accounting diplomas.

3.3.5.3 Forecasts of Future Manpower Demand

The situation concerning future manpower demand in Northern Alberta is similar to that at the provincial level; there are few studies available and no agency provides regular predictions for general manpower demands, let alone highly qualified manpower.

There are models available for the provincial level; however, applying them at a regional level is not recommended because of statistical variations in data and regional differences in specific occupations.

Health Care Forecasts--"A Study of Factors Affecting the Supply of Physicians and Dentists in Northern Alberta to Aid in Developing Recruitment Strategies" was sponsored by the NADC in 1983 (NADC, 1983b). The study team indicated that there was a possible short-fall in the number of dentists and doctors in northern Alberta, compared to the provincial averages based on dentist/doctor to population ratios. About nine new dentists were needed to approach provincial standards. The problem was expected to be self-correcting for the dentists within three to five years, based on the historical rate of establishing dental practices.

The situation for medical practitioners was considered to be similar, although the numbers needed were greater, about 22 general practitioners and about 10 specialists. The extent of any change for doctors in the north is not known. Any imbalance may be corrected to a certain extent in the future, as the Department of Hospitals and Medical Care announced a new incentive program in December, 1984. This program offers up to $40,000 per year in extra income to doctors who go to or stay in under-serviced communities in Alberta.

In 1983 the Alberta Department of Advanced Education reviewed the employment situation for rehabilitation practitioners in Alberta, and forecast the requirements for new full-time positions to 1986. As of December, 1982, there were 1,367 positions in the province, with a vacancy rate of 5.3 percent and an annual turnover rate of 23.5 percent. Rehabilitation workers are needed in government services, community services, and the school system. There are four rehabilitation service programs at community colleges, and in 1979-1982 they graduated an average of 93 students per year. Northern Alberta was considered a high priority area for encouraging new graduates to take up positions. Table 11 shows the predicted new positions for Social Service Regions in Northern Alberta. The level of training required for these new positions was not identified, therefore it is not possible to predict the number of new graduates needed. To date there has not been a follow-up study to review the status of these predictions.

Table 11

Estimated Number of New Full-Time Positions for Rehabilitation Workers in Northeast and Northwest Social Services Regions, 1984-1986

Social Service Region	1984	1985	1986
Northeast	10	7	16
Northwest	0	1	0

Source: Program Services Division, Alberta Advanced Education, June, 1983.

Energy Industry--It is possible to identify some manpower requirements, mainly for the oil and gas industry, by examining the lists of large scale resource industry projects. The main sources for this information are the reports regularly prepared by Alberta Manpower (summarized in Table 2). Information for these projects is obtained from individual companies; however, the manpower requirements are not always available, and do not usually specify occupational categories in any detail. Some information from this source was integrated with the Manpower Survey data.

The Slave River Hydro Feasibility Study (Alberta Environment, 1982) identified, in very general terms, the expected workforce for dam construction and operation. The peak construction force was estimated at about 2,600, but would be at this level for only one to two years. Operation of the dam and power house would require only 61 staff, and of this number only a few (such as engineers) might be considered highly qualified manpower.

3.4 Summary

This chapter has presented information on economic and employment conditions, as obtained from prepared documents, interviews with government personnel, and other sources. Comparison

of different information sources is difficult, because agencies establish different boundaries for their data needs. In addition, very few agencies maintain readily available information on the current situation in Northern Alberta.

The general economic forecast for Canada and Alberta is one of low growth during the next several years; the Alberta economy is expected to expand at 2 to 2.5 percent annually. The economy of Northern Alberta suffered during the recession but has begun to recover. The major sign of recovery is evident in the increased oil and gas activity throughout the north, especially heavy oil and oil sands developments in the eastern region of Northern Alberta. The construction industry, and the oil field service industry are both benefitting from this activity. The other sectors of the economy such as agriculture, coal and forest products, and services (for example, health or education) are not expected to expand substantially. The energy industry is the only high profile source of growth seen for Northern Alberta in the near term.

Unemployment in Canada, Alberta, and Northern Alberta increased dramatically with the recession. Only two groups in the Province have increased employment levels since 1981: agriculture, and community, business, and personal services. Increased energy industry activity in Northern Alberta is expected to create more jobs; however, the actual effect on unemployment levels is not certain, given general growth in the working age population and possible in-migration of people with skills needed. The only major impact foreseen is the possible construction of a new oil sands plant, and at least four groups are examining this potential. Other sectors, such as construction, manufacturing, transportation, business and health services are not expected to expand significantly to affect general unemployment levels.

Only one source identified in this survey of government agencies, the Alberta Health and Social Services Disciplines Committee, provided recent data on highly qualified manpower for Northern Alberta. The AHSSDC conducts an annual survey, and the data are directly related to the highly qualified manpower categories of the NADC Bursary Program. While there are models used by the federal and provincial governments to forecast manpower demand, they are not suitable for use on a region as small as Northern Alberta.

4. The Manpower Survey

This chapter includes data on the rate of return of the Manpower Survey, sections interpreting the data for each of five regions, general comments that applied across the regions, and a summary of manpower projections based solely on the Manpower Survey.

4.1 Rate of Return

The rate of return on the mailed surveys was 60.3 per cent for Data Collection I and 62.5 per cent for Data Collection II. With telephone follow-up to half the non-respondents on the first stage and to one-third the non-respondents on the second stage, an additional 32 employers either gave their response to the survey over the telephone or sent it by mail; half of these had positions. As a result, a total of 204 of the 270 employers contacted or 75.6 per cent (including the 13 who were interviewed personally or by telephone) gave their response to the survey. This was considered a reasonably representative response from the major employers both in the study and in the study area.

The number of responses from each employer group and the number of respondents who projected positions are presented in Table 12. Data Collection I and II respondents were grouped for the purposes of data interpretation.

In addition to the Manpower Survey, letters requesting referrals to the five major local employers were sent to Chambers of Commerce, Villages, Counties, Improvement Districts and Municipal Districts. Of the 29 letters mailed to Chambers of Commerce, 5 were returned, 4 with referrals. Of the 30 mailed to Villages, Counties, I.D.'s and M.D.'s, 15 were returned, 9 with referrals. Respondents who did not include employer referrals indicated there were no employers of highly qualified manpower in their area, given the restriction that they not include schools, hospitals, or government offices which were already being contacted.

Table 12

Manpower Survey Response Rates

Employers	No. Mailed	No. Returned	No. with Positions*
Local Businesses	52	30	20 (17+3)
Ed/Calg Offices	19	14	3
Towns & Cities	27	17	5
Hospitals	34	19	20 (18+2)
School Superintendents	28	20	21 (19+2)
Provincial Gov't	24	17	9
Federal Gov't	10	8	1
Referrals from Data Collection I	26	16	4 (3+1)
Health Units	6	2	5 (2+3)
AADAC local units	5	2	3 (2+1)
Native Friendship Centres	9	5	3 (2+1)
Fam & Com Support Serv's	5	4	1
Libraries	6	3	1
Colleges	5	1	4 (1+3)
Day Care	1	1	1
TOTAL	257	159	101
Major Industries	13 interviews		10

* first # in bracket is mail response; second # is telephone follow-up response where there were positions. In addition there were 16 follow-up calls to employers with no positions.

4.2 Interpretation of the Data

Respondents were separated into five different regions. The data are reported separately for Cold Lake & Area, Grande Prairie, Fort McMurray, Peace River and Small Northern Towns outside the Cold Lake Area, and for Unspecified Northern Locations. The last region included some government offices and Edmonton- or Calgary-based businesses that did not indicate where

positions might be in Northern Alberta. Each region is discussed separately.

For ease in interpreting the data in the tables, the employer responses were separated into three employment groups: Science & Engineering, Medicine & Health, and Education, Management & Social Science. (Management and Social Science positions were projected by employers in all three employment groups but very few employers requested positons in either area exclusively. Management and Social Science positions were therefore grouped with Education positons for practical purposes.)

4.2.1 Cold Lake & Area

Towns in this region included Grand Centre, Bonnyville, Fort Kent, Glendon, Medley, St. Paul, Lindbergh and Cold Lake. There were three Science and Engineering respondents reporting positions and employment needs were estimated for two Lindbergh companies based on information provided by Alberta Manpower. Ten Medicine and Health respondents reported positions. Eight Education, Social Science and Management respondents reported positions. Their responses appear in Table 13.

Change scenarios were reported by two Science and Engineering, three Medicine and Health, and four Education, Social Science and Management respondents. One hospital reported two Change scenarios, one for a new hospital expansion that was already underway. That information was collapsed into the No Change Scenario since there seemed little chance that staffing would not go ahead. All other Change scenarios referred to increased oilfield activity in a general sense except Dome and Esso which reported their own needs.

Referring to Table 13, the positions judged difficult to fill were those for bilingual BEd graduates. The superintendent reporting this need explained that his was not the only school district experiencing difficulty hiring bilingual teachers. "We boards of education offering French Immersion in Alberta had to hire 225 teachers last spring at this time and only 75 were available in Alberta. (These numbers included Edmonton.) Teachers have to be fluent in both English and French. Special needs are music, band, early childhood education, science, math and computers, and business education." He also believed that

Table 13

Cold Lake & Area Projected Employment

		No Change '86	No Change '87	Change* '86	Change* '87
Science & Engineering					
Deg	Petroleum Eng			4	4
Dip	Computer Systems Tech	4			
	Instrumentation Eng Tech	2	2		
	Materials Eng Tech	1			
	Mech-Industrial Eng Tech	1			
	Mech/Petrol Explor Tech			4	4
	Power Eng Tech	3	3		
Medicine & Health					
Deg	BScN	1		2	2
	BScN Psychiatric	5			
	Dentist		2		
	Dietetics		1		
	MD Gynecol, Obstet, Pediat, Radiol, Surgeon			5	
	MD Psychiatry	1			
	Occup Therapy			2	
	Physiotherapy		1	2	
	Pharmacy	1			
	Speech Therapy	1			4
Deg or Dip					
	BScN or RN (some Psych)	10			
Dip	Dental Ass't	3			
	Dental Hygiene	4			
	Health Inspector				1
	RN	3	3	4	
	RNA	3			
	Respiratory Tech			1	

Table 13 (cont'd)

Cold Lake & Area Projected Employment

		No Change '86	No Change '87	Change* '86	Change* '87
Education, Soc Sci, Management					
Deg	BEd (no spec's)	3	2	1	1
	Elem	6	6	10	10
	Special Ed	1	1		
	Bilingual	10	10	8	8
	French	2	3		
Dip	Addictions Couns	2	1		
	Accounting			1	
	Admin. Management		1		
	Secretarial Sci			1	

* Increased Oilfield Activity

_ Indicates anticipated difficulty in filling position

previous bursary applicants who were bilingual had not received enough consideration by the Bursary Committee.

The highest numbers of graduates needed were projected for bilingual teachers, nurses (either degree or diploma), elementary BEd teachers, psychiatric BScN nurses, computer systems technologists and dental hygienists for the No Change scenario.

If increased oilfield activity materializes, the highest numbers of additional positions to be filled will be for elementary and bilingual teachers, doctors, petroleum engineers, mechanical instrumentation or petroleum exploration technologists, speech therapists and RN nurses. The hospital respondent who predicted the need for five doctors anticipated no problem in filling the positions.

4.2.2 Grande Prairie

The respondents in this regional grouping were all from the city of Grande Prairie. There were two employers with positions in the Science and Engineering group, three in the Medicine and Health group, and six in the Education, Social Science and Management group.

The hospital projections included a Scenario 2 for the opening of a long-term care facility in the fall of 1986. One Education, Social Science and Management employer included projections for continued or increased oil/gas development. All the other employers used only the No Change scenario for their employment projections.

The respondents from the forestry industry reported a "vast oversupply" of forestry degree graduates and a scarcity of computer science degree graduates. The engineering degree needs were a selection of mechanical, electrical and chemical but not necessarily a specific number of any one. The job market for the forestry industry in Grande Prairie is controlled by the job market in British Columbia. Employees prefer to work in B.C. and leave positions vacant in Grande Prairie as new jobs become available in B.C.

As indicated in Table 14, the highest number of positions to be filled in the No Change scenario are for nurses (degree or diploma), registered nursing assistants, engineers, and teachers. With the hospital expansion there will be additional need for nurses and registered nursing assistants as well as one occupational therapist and one recreation therapist. With increased oil or gas activity in the area there will be a need for technologists in building construction, civil engineering, computer systems, a planner and a finance or marketing management diploma graduate.

Table 14

Grande Prairie Projected Employment

		No Change '86	No Change '87	Change '86	Change '87
Science & Engineering					
Deg	Computer Sci	2	2		
	Mechanical Eng	1			
	Eng: Mech/ Elec/ Chem	6	6		
	Forestry	2	2		
Dip	Bldg Const Eng Tech			2*	1*
	Civil Eng Tech			2*	1*
	Computer Systems Tech	1	1	1*	2*
	Eng Design & Drafting Tech	1	1		
Medicine & Health					
Deg	BScN Com Health	3	3		
	Occup.Therapy			1**	
	Physiotherapy	2	1		
	Speech Therapy	1			
Deg or Dip					
	BScN or RN	8	1	4**	1**
	Recreation Therapy			1**	
Dip	Dental Ass't	1	1		
	Medical Lab Tech	3	1		
	Medical X-Ray Tech	1			
	RNA	5		6**	2**
	Respiratory Tech	1			
Education, Soc Sci, Management					
Deg	BEd (no spec's)	5	5		
	French Immersion	3	2		
	Music	1			
	Bus Ed	1			
	BSW Social Work	1	1		
	Lawyer	1			
	Recreation/Fine Arts	1	2		
	Planning		1	1*	

Table 14 (cont'd)

Grande Prairie Projected Employment

		No Change '86	No Change '87	Change '86	Change '87
Dip	Finance/Marketing Man	1	1		1*
	Legal Secretary	1	1		
	Secretarial Sci	3	3		
	Youth Development	1	2		

* Increased Oil/Gas Activity
**Expanded Hospital Facility
_ Indicates anticipated difficulty in filling position

4.2.3 Fort McMurray

Six Fort McMurray employers in the Science and Engineering group projected positions for 1986/87, as well as seven in the Medicine and Health group and six in the Education, Social Science and Management group.

Many employers also gave projections for a growth scenario as well. Four Engineering and Science employers described a new oil sands plant scenario as did four Medicine and Health employers, two law firms and the library.

Most of the Science and Engineering positions were projected by Suncor and Syncrude. The city of Fort McMurray was included in this group since all their projections were in the Science and Engineering area.

None of the positions projected was considered particularly difficult to fill by any employer. The highest numbers required in the No Change scenario are for teachers (especially elementary and French Immersion), engineers (especially mining, mechanical, chemical, and electrical), technologists in computer systems, instrumentation engineering and power engineering, nurses (both degree and diploma), physiotherapists, dental hygienists,

occupational health nurses, and accounting and secretarial science diploma graduates. The Change scenario again showed a heavy emphasis on engineering graduates. (See Table 15.)

One Science and Engineering respondent said that Instrumentation Engineering Technology training was the most important technical training of any that will be needed if there is a "boom" in Fort McMurray. Normally people in this field of training would only be hired if they had work experience, however in a boom situation there would be insufficient numbers of trained instrumentation technologists available.

Two respondents inquired whether or not the employment projections would be collected annually. With the city waiting for the possible announcement of a major project as soon as June 1985, employers were understandably unsure what framework to use for predictions.

One respondent in the educational field reported that the NADC Bursary had a low profile, meaning that people were not very aware of the bursary.

Table 15

Fort McMurray Projected Employment

		No Change '86	No Change '87	Change* '86	Change* '87
Science & Engineering					
Deg	Chemistry		1		
	Computer Sci	1			
	Chemical Eng	4	4	5	5
	Civil Eng	2	1	4	1
	Electrical Eng	6	6	10	10
	Mechanical Eng	7	6	13	13
	Metallurgical Eng	2	2		
	Mineral Processing Eng	2	2	10	10
	Mining Eng	4	4	10	10
	Eng: Chem/Mechan/ Metal/ Mineral Proc				6
Dip	Civil Eng Tech	1	1	1	
	Computer Systems Tech	4	4	11	10
	Eng Design & Drafting Tech			3	3
	Instrumentation Eng Tech	4	4	3	10
	Power Eng Tech	6	6		
Medicine & Health					
Deg	Dentist				1
	Dietetics	1	1		
	BScN	3	3		
	MD Ear, Nose & Throat	1			
	Internal Medicine	1			
	Occupational Therapy	2	2		
	Optometrist			1	
	Pharmacist	2	2		
	Physiotherapy	3	4		
Dip	Dental Ass't	3	3	3	3
	Dental Hygiene	4	4	2	5
	Denturist	1		1	
	Occupational Health Nurse	3	3		3
	Pre-optometry	1			
	RN	5	5		

Table 15 (cont'd)

Fort McMurray Projected Employment

		No Change '86	No Change '87	Change* '86	Change* '87
Medicine & Health					
Dip	Biomed Tech	2	1		
	Dietary Tech	2	2		
	Med Lab Tech	2	2		
	Med X-Ray Tech	2	2		
	Respiratory Tech	1	1		
Deg or Dip					
	BScN or RN (intensive care, OR, air medivac)	5	5	4	4
	psychiatric nurse	2	3		
Education, Soc Sci, Management					
Deg	BEd (no spec's)	12	14		
	Elem	11	9		
	French Immersion	7	7		
	IA or Voc Ed	3	2		
	BSW	1	1		
	BCom	1			
	Lawyer				2
	Law Articling Student			1	1
	Library				2
Dip	Accounting	5	5		
	Audio-visual tech	1			
	Child Care	1	1		
	Clinical Pastoral Care		1		
	Library Tech	2			
	Personnel Admin	1			
	Secretarial Sci	4	4	8	8

* New oil sands project

4.2.4 Peace River and Small Northern Towns

In addition to Peace River, the towns of Athabasca, Beaverlodge, Falher, Fairview, Fort Vermilion, Fox Creek, Grande Cache, High Level, High Prairie, Lac La Biche, Manning, McLennan, Spirit River, Slave Lake, Valleyview, and Whitecourt are grouped into this reporting region. The logic behind this widespread grouping lies in the lack of any predicted major development in any of these towns that would have anything other than largely local effects on manpower requirements in 1986 and 1987.

A total of 4 employers predicted employment for highly qualified manpower in the Science and Engineering sector, 19 in the Medicine and Health sector, and 25 in the Education, Social Science and Management sector. Most of the employers in this area are hospitals and school boards.

Of those predicting a scenario for change, two Science and Engineering employers were included (one basing predictions on construction of a Shell In-Situ plant near Peace River, and the other, on expansion of operations at the Shell Progress Complex near Spirit River). Of the Medicine and Health employers, two in Peace River described scenarios based on the Shell project or an oilsands project and four hospitals reported either new buildings (Slave Lake - Auxiliary Hospital, and McLennan - new hospital) or expansion of services (Valleyview - hospital expansion and extended care beds, and High Prairie - Psychiatric Unit).

Seven employers from the Education, Social Science and Management sector gave predictions for a Change scenario. Three predicted expansion of services (libraries and native services) and four based predictions on the Shell project in Peace River or "increased oil activity."

As indicated in the following table, positions considered difficult to fill included power engineer technologists, instrumentation/electronics/electrical technologists, physiotherapists and a general practice medical doctor. Great difficulty in hiring teachers for one of the northernmost school divisions (Fort Vermilion) was reported. The Bursary Program is not perceived to meet the needs in this area. Most of their staff are hired from eastern Canada.

Table 16

Peace River and Small Northern Towns Projected Employment

		No Change '86	No Change '87	Change '86	Change '87
Science & Engineering					
Deg	Civil Eng			1*	
Deg or Dip					
	Bus Admin/Accounting			1*	
Dip	Chem Tech	1			
	Instrumentation/Electronics/ Electrical Tech	3			1*
	Lumber Products & Plywood		1		
	Power Eng Tech	1+1	2		6*
	Mech-Ind Eng Tech	1	1		1*
Medicine & Health					
Deg	BScN: Gen, Com, Pub Health	2		1*	
	Dentist	1			
	MD	1+1			
	MD Obstet & Anaesth	1			
	Occup Therapy	1			
	Physiotherapy	2+7	2		
	Speech Therapy	1+3	4		
Deg or Dip					
	BScN/RN	8	8	2**	2**
Dip	Combined Lab & X-Ray	2	1		
	Dental Ass't	4	4	1*	
	Dental Hygiene	2+3	4		
	Denturist	1			
	Dietary Tech	1	1		
	Health Record Tech	1			
	Medical Lab Tech	3	1		
	Medical X-Ray Tech	1			
	Pharmacy Tech	1			
	Public Health Inspector			1*	
	RN	18	11	5**	12**
	RNA	9	8	2**	13**
	Recreation Therapist	1	1		

Table 16 (cont'd)

Peace River and Small Northern Towns Projected Employment

		No Change '86	No Change '87	Change '86	Change '87
Education, Soc Sci, Management					
Deg	BEd (no spec's)	55	50	2*	2*
	Elem	21	17		
	Special Ed	5	6		
	French Immersion	7	7		
	French	4	3		
	I A & VocEd	5	5		
	Math	2	5		
	Math, Sci	11	11		
	Lang Arts	5	5		
	Reading, Math, Soc	3	3		
	Bus Ed	1	1		
	Home Ec	5	5		
	BA Sociol		1		
	BCom	2	1		
	BSW	6	6	5**	4**
	Family Studies				1*
	Lawyer			1*	
	Librarian	1		5**	
	MEd Ed Psych	1			
Dip	Addictions Couns	1			1*
	Accounting	2	2		1**+2*
	Admin Man				1**
	Audio-visual Tech	1			
	Legal Secretary	1	1		
	Library Tech	1		4**	
	Life Skills	2	2		1*
	Municipal Admin	1			
	Secretarial Sci	4	4	7**	4**
	Social Service		1		

* Increased Oilfield Activity

** Expanded Services (hospitals, libraries, Native centres)

_ Indicates anticipated difficulty in filling position

The most numerous positions projected for a No Change scenario in this region are power engineering technologists, nurses (degree or diploma), teachers, physiotherapists, speech therapists, dental hygienists, registered nursing assistants, and degrees in social work. For the projected expanded services, additional nurses (RN), registered nursing assistants, degrees in social work, librarians, library technicians, and diplomas in secretarial sciences will be required. For the projected increased oilfield activity scenario, additional power engineering technologists will be needed.

There was a difference of opinion about the difficulty in filling power (or steam) engineer positions among this group of employers. One had no difficulty locating power engineers but could not find an instrumentation technologist. Another indicated power engineering positions were difficult to fill. The latter indicated his first choice was for experience, and the second choice was for a third class ticket.

One employer indicated that new engineering graduates would be placed in basic training programs in Calgary and would not be placed in the field for at least a year after hiring.

One hospital respondent requested that they be sent frequent updated lists so that when they were aware of an opening they could contact individuals while they were still in school. This employer thought RNA's were not aware of the Bursary Program and that they should be. Another hospital indicated no shortage of RNA's from Fairview College.

One northern hospital reported that some of the graduates from the area came back to work and the respondent thought the Bursary Program was a good idea. Another hospital administrator thought the Program should be applicable "more to students who reside in the North." Another commented that any program that drew southern people to the north was helpful.

One administrator of a small acute care hospital wrote that "new graduates are only beneficial if they have some experience in rural hospitals during training."

A health unit administrator recommended more promotion of bursaries at university and focusing on areas where recruitment is difficult. Their unit was anticipating difficulty filling a

speech therapist and a dental hygienist position.

Two school superintendents reported no shortage of general teachers with or without bursaries. However one thought a shortage of French teachers might remain critical.

One school superintendent requested being provided with names and qualifications of bursary recipients and when these would be available. Another superintendent suggested "willingness and understanding of the north should be predominant determiners (for bursary awards). Financial need should be a secondary consideration. 'Recruit rather than Assist.'"

A respondent for a Native organization commented on the lack of Native professionals and wanted an incentive program specifically for Natives.

4.2.5 Unspecified Northern Locations

This "region" was comprised of employers with central offices in Edmonton or Calgary and regional offices in Northern Alberta. These employers could predict that northern positions might be available but could not specify the exact site.

Six major employers predicted positions in the Science & Engineering sector including one bank, one accounting firm, one engineering firm and three major industrial companies. There were no respondents in the Medicine and Health sector and there were six employers that predicted positions in the Education, Social Science and Management sector. Five of these were government departments and the sixth was a regional Day Care Consultant.

One Science & Engineering employer gave predictions for a Change scenario - increased activity in the heavy oil industry. Two Education, Social Science and Management employers gave predictions for expanded client services as a Change scenario - one for day care programs for preschool children and one for a multi-purpose addiction treatment centre.

As indicated in Table 17, no positions were considered especially difficult to fill.

Positions with the greatest number of projected vacancies required early childhood development diploma or certificate graduates, degrees in criminology, social work, or social science or a diploma in social service, a commerce degree or a mechanical engineering degree.

One major industry respondent reported hiring engineers from eight universities and only one might be placed directly in Northern Alberta. Many of their professionals work out of Calgary.

Two government employers reported that they currently hire people with both education and experience although they did show projections because people with experience are not always available. Ongoing growth of Day Care Programs was projected for communities of over 1,000.

4.3 General Comments Across Regions

1) Some of the major employers hire from a group of degrees or technologies, not just from one specific program. Examples are found in Tables 13 to 17, such as 4 positions from Mechanical-Industrial or Petroleum Exploration Technology, and 3 positions from Instrumentation, Electronics or Electrical Engineering Technology. Examples occurred in the Engineering and Social Services fields. Other fields such as Medicine and Health and Education were very program specific in their needs.

2) The length of time allowed for bursary recipients to begin to return their northern service does not fit the requirements of some of the major companies who train new university graduates in Edmonton or Calgary and then send them into other locations including the north. A minimum of one year or even two years before bursary recipients have to return their northern service would expand the number of major companies where university bursary recipients could seek employment.

Table 17

Unspecified Northern Location Projected Employment

		No Change '86	No Change '87	Change '86	Change '87
Science & Engineering					
Deg	Agriculture			1*	
	BComm	8	2	1*	
	Mechanical Eng	4	6		
	Eng: Mech/ Petrol/ Civil/ Chem	3			
	Geology	2			
	Geophysics	2			
	MBA			1*	
Dip	Agric	2	2		
	Appraisal & Assessment	1	1		
	Civil Eng Tech	1			
	Electronics/Computer	1	1		
	Instrumentation Eng Tech	1			
	Petrol/Hydrocarbon/Power Eng Tech	3			
Education, Soc Sci, Management					
Deg	BEd Adult Ed	2	2		
	Home Ec	1			
Deg or Dip					
	Admin/Commerce	1			
	Social Sciences	6	6		14**
	Deg in Crimin/BSW/BA SocSci or Dip in Social Service	11	11		
Dip or Cert					
	Early Childhood Devel	30	30	15**	15**
Dip	Secretarial Sci	2			

* Increased Oilfield Activity

** Expanded Services

3) Employers can only predict accurately for one year ahead. The second year projections may show low numbers or none at all. However the interpretation is difficult because the response can either mean there are few or no positions or the employer does not know what the positions will be. This observation from the mailed surveys was supported by the personal and telephone interviews. Some employers would simply not answer questions about projections for the second year ahead.

4) Some apprentice programs can include full-time enrolment at post-secondary institutions. Power engineering and electrical engineering are two areas where students may attend classes full-time for a year or longer. During this time they are not eligible for apprentice support from Alberta Manpower.

Power engineers can either follow the apprentice route for four years or take their fourth and third class at SAIT or NAIT. The northern colleges (Fairview, Keyano, Lakeland and Grande Prairie) all offer varying amounts of instruction fitting into the apprentice route. Students who complete their fourth and third classes at a technical institute then go on to complete their work experience which is also called an apprentice program. Either route can be followed to obtain a first class steam ticket.

5) Only a sample of local employers such as dentists, pharmacists, optometrists, law firms, engineering firms, etc. were contacted. The projections reported in the tables are, therefore, most likely to be smaller than if all employers had been contacted. (The largest firms for any given type of business were selected for the sample, making it impossible to simply extrapolate needs based on sheer proportion sampled.)

6) A number of employers indicated they wanted computer expertise but were unsure whether they needed a degree or diploma to fill the position. Most wanted programming ability and the Computer Systems Technology program includes programming as well as many other subjects in the program descriptions. Unless an employer specified a degree in Computer Science was wanted, the diploma level was checked for computer positions.

4.4 Summary of Manpower Projections

The No Change scenario projections were summed across regions for 1986 and 1987. The totals for each degree and diploma program are presented in Tables 18 and 19 respectively. These Summary tables are interpreted in the context of data collected from other sources in the Synthesis chapter. Therefore the reader is cautioned in the use of Tables 18 and 19. They are no more than a summary of projected positions for 1986 and 1987 from a majority of the major employers in Northern Alberta.

A discussion of possible major projects that may go ahead in the study region was included in the previous chapter. Specific guidelines for interpreting the Change scenario projections are included in the Synthesis chapter where all the data sources for the study are integrated.

Table 18

Summary of Projected Degree Positions for the Current Economic Climate

Degree	'86	'87
Science & Engineering		
Chemistry		1
Computer Science	3	2
Chemical Engineering	4	4
Civil Engineering	2	1
Electrical Engineering	6	6
Mechanical Engineering	12	12
Metallurgical Engineering	2	2
Mineral Processing Engineering	2	2
Mining Engineering	4	4
Eng: Mech/ Elec/ Chem/ Petrol/ Civil	9	6
Forestry	2	2
Geology	2	
Geophysics	2	
Medicine & Health		
BScN	6	3
BScN Psychiatric	5	
BScN Community Health	3	3
Dentistry	1	2
Dietetics	1	2
MD General	1+1	
Ear, Nose & Throat	1	
Internal Medicine	1	
Psychiatry	1	
Obstetrics & Anaestheology	1	
Occupational Therapy	3	2
Pharmacy	3	2
Physical Therapy	2+12	1+7
Speech Therapy	1+5	4
Education, Social Science & Management		
Commerce	11	3
Education (no specifications)	75	71
Elementary	38	32

Table 18 (cont'd)

Summary of Projected Degree Positions for the Current Economic Climate

Degree		'86	'87
Education	Special Ed	6	7
	French	6	6
	French Immersion	10+17	10+16
	Business Ed	2	1
	IA & Voc Ed	8	7
	Home Economics	5	5
	Math	2	5
	Math, Science	11	11
	Language Arts	5	5
	Reading, Math, Social Studies	3	3
	Music	1	
	Adult Ed	2	2
M Ed	Ed Psychology	1	
BSW		8	8
Home Economics		1	
Law		1	
Library		1	
Planning			1
Recreation/ Fine Arts		1	2
Sociology			1

_ Indicates anticipated difficulty in filling the position

Table 19

Summary of Projected Diploma Positions for the Current Economic Climate

Diplomas	'86	'87
Science & Engineering		
Agriculture	2	2
Appraisal & Assessment	1	1
Chemical Tech	1	
Civil Eng Tech	2	1
Computer Systems Tech	9	5
Electronics/ Computer	1	1
Eng Design & Drafting Tech	1	1
Instrumentation Eng Tech	7	6
Instrument/ Electronics/ Electrical	3	
Lumber Products & Plywood		1
Power Eng Tech	18+10	11
Petrol/ Hydrocarbon/ Power Eng Tech	3	
Materials Eng Tech	1	
Mechanical-Industrial Eng Tech	2	1
Medicine & Health		
Biomed Tech	2	1
Combined Lab & X-Ray Tech	2	1
Dental Assistant	11	8
Dental Hygienist	2+11	8
Denturist	2	
Dietary Tech	3	3
Health Record Tech	1	
Medical Lab Tech	8	4
Medical X-Ray Tech	4	2
Occupational Health Nurse	3	3
Pharmacy Tech	1	
RN	26	19
Deg or Dip Nurse (including some psych, intensive care, OR, air medivac)	33	17
RNA	17	8
Recreation Therapist	1	1
Respiratory Tech	2	1
Pre-optometry	1	

Table 19 (cont'd)

Summary of Projected Diploma Positions for the Current Economic Climate

Diplomas	'86	'87
Education, Social Science & Management		
Accounting	7	7
Addictions Counselling	3	1
Admin Man/ Finance/ Marketing Man/ Municipal Admin	4	2
A-V Tech	2	
Clinical Pastoral Care		1
Dip or Cert Early Childhood Development	31	31
Deg or Dip Criminol/ Social Services	11	11
Deg or Dip Social Sciences	6	6
Library Tech	3	
Life Skills	2	2
Legal Secretary	2	2
Secretarial Science	13	11
Youth Development	1	2

_ Indicates anticipated difficulty in filling position

5. Post-Secondary Institution Survey

This brief chapter includes a description of interviews held with representatives of post-secondary institutions in Northern Alberta and Edmonton, the current status of how students are tracked to their first employment site after graduation, and the coordination of post-secondary programs.

5.1 Interviews

Three post-secondary institutions in the study region (Grande Prairie Regional College, Keyano College, Fairview College), Lakeland College and the Northern Alberta Institute of Technology (NAIT) were contacted for any available information on employment of their graduates or assessments of employer needs.

Personal interviews were conducted with the Vice-Presidents of Instruction or their counterparts at Grande Prairie Regional College, Keyano College and NAIT and telephone interviews were conducted with the Dean of Instruction at Fairview College and the Registrar and Job Placement Officer at Lakeland College.

NAIT was included since it offers approximately 50 technical programs, most of which are not available at colleges in Northern Alberta.

Lakeland College was an agriculture college originally but now has expanded its programs to include oilfield programs as well as other areas. The main campus lies just south of the study region at Vermilion and there are satellite campuses in the study area.

5.2 Tracking of Graduates

Of the five institutions, NAIT was the only one to have an ongoing system for tracking its graduates to their first jobs and reporting the results by program. Since 1978, NAIT has published an annual report, NAIT Placement Fact Sheets, which includes a summary of placements of student graduates for each program in training-related employment, non-training-related employment, further study and those not employed or traced. Reported

starting salaries including high, low and median levels, training-related employers and training-related employment locations are provided for each program. Lakeland College reported beginning similar data collection in 1985 and their report will be available later in the year. Keyano College conducts a graduate follow-up study but does not report the results by program.

A summary of employment rates for NAIT 1984 graduates in training-related jobs is presented in Table 20. NAIT is the only training site for most of these programs in the northern half of the province. Only those programs where a projected need was reported in the Manpower Survey section of this study are included. (The percentages in Table 20 represent the portion of students in each program who reported obtaining a job immediately following graduation in a field related to their NAIT program. Data are also available on percentage in non-training related jobs, percentage who are pursuing further study, and percentage who are unemployed or who did not respond to the job survey.)

Fairview College assembled a list of agricultural employers who have hired their graduates in the past for the purposes of this study. Some difficulty had been encountered in the Manpower Survey identifying employers in the agriculture sector who hired graduates of post-secondary agriculture programs. Most of the employers listed by Fairview College had been contacted in the Manpower Survey and did not have projected positions for agriculture diploma graduates for 1986 and 1987.

The Vice-President Instruction of NAIT reported employer demand in job or program clusters rather than in isolated programs. Demand appeared to increase or decrease for a cluster of programs. Current demand was strong in the Electrical, Electronics, Instrumentation group, the Medical Lab, Medical X-Ray, Respiratory group, and the Business Administration, Computer Systems group. The Earth Resources group including Petroleum Resources was considered healthy although 1984 employment for that group was lower than for the other groups identified.

Follow-up information provided by NAIT Program Development Services indicated that 340 students from Northern Alberta are currently enrolled in NAIT programs. The highest enrolments of Northern Alberta students are in architectural, electronics engineering tech, administrative secretarial arts, commercial

cooking and business administration programs.

Table 20
Employment Rates for NAIT 1984 Graduates

Program	% in Training-Related Employment
Science & Engineering	
Chemical Tech	90
Civil Eng Tech	57
Computer Systems Tech	67
Instrumentation Eng Tech	55
Electrical Eng Tech	42
Electronics Eng Tech	62
Eng Design & Drafting Tech	56
Power Eng Tech - 3rd Class	41
4th Class	25
Hydrocarbon Eng Tech	65
Materials Eng Tech	67
Mechanical-Industrial Eng Tech	58
Medicine & Health	
Combined Lab & X-Ray Tech	51
Dental Assistant	87
Denturist	40
Dietary Tech	56
Medical Lab Tech	92
Medical X-Ray Tech	66
Respiratory Tech	93
Health Record Tech	93
Business & Management	
Accounting	58
Administrative Secret Arts - dip	67
cert	40
Administrative Management	51
Finance	80
Marketing Management	83

Source: NAIT 1984 Placement Fact Sheets

5.3 Coordination of Post-Secondary Programs

All the post-secondary institutions reported contacting employers for information to support requests to Alberta Advanced Education for new programs. Keyano College was currently developing a two-year Computer Business Systems program based on feedback from employers in Fort McMurray. Employment information is obtained by Advanced Education from Alberta Manpower for use in assessing new program proposals.

A summary of all programs by institution is included in the magazine It's About Time . . . to start thinking about your Future which is revised every other year by Alberta Manpower, Education, and Advanced Education. There is no regional system in place to match specific employers' needs with numbers of students admitted to specific programs.

In discussions with a number of sources, three issues were raised:

1) the time lag between employers' needs being identified and the time for students to complete a program makes coordination extremely difficult. The changing economy complicates the problem for employers predicting their needs three or four years in advance.

2) post-secondary institutions are both autonomous and unbound by any requirement to promise jobs for graduates. Job training is considered too narrow a purpose for post-secondary institutions. The issue is a philosophical one.

3) identifying existing trained manpower and integrating it with the supply of new graduates and employers' needs is a confounding problem.

5.4 Summary

Of the five post-secondary institutions contacted, NAIT was the only one to conduct extensive follow-up of graduates to their first place of employment after graduation. Percentages of 1984 graduates employed in training-related areas were summarized. The coordination of existing and new post-secondary institution programs was described.

6. Synthesis of Data Sources

6.1 Introduction

The primary purpose of this study was to identify a priority list of employer requirements for the upcoming years to enable the NADC Bursary Committee to make decisions in awarding bursaries. The principal source of data collected to satisfy the study purpose was a survey of all the major employers of highly qualified manpower in Northern Alberta.

To provide a base of information for verifying the Manpower Survey results, employment data and projections were collected from government agencies and post-secondary institutions. The information sources judged to be most useful in verifying the Manpower Survey results were the Alberta Health and Social Services Disciplines Committee (AHSSDC) 1984 report, the NAIT 1984 Graduate Placement Fact Sheets Report, and the limited review of available manpower data for trends. Many of the other reports reviewed for background were also helpful particularly in assessing the scenario projections collected in the Manpower Survey.

6.2 Procedure in Developing Priority Lists for Programs

The summary tables of projected employment needs for the current economic climate served as a starting point in developing the Priority Lists (Tables 18 and 19). The programs were rank ordered according to the total number of projected positions. The rank ordered list was then roughly divided into six levels of need based on clustering of ranked numbers. Then the total number of positions projected for each program was compared to the number of vacancies reported by the AHSSDC for March of 1984, the percentage of the 1984 NAIT graduating class reporting jobs in a training-related area, the trends for available manpower, and employer comments, where applicable.

Congruence was sought between all available outside data sources and the results of the Manpower Survey. Where the Manpower Survey program total number of projected positions "fit" the outside sources, the program was left in the original level of need; where justified by outside sources, the program was moved to a higher or lower need level. The results of all the

congruence tests then became the priority list for degree programs (Table 21) and the priority list for diploma programs (Table 22).

The only projected positions not included from the Summary Tables were those where there was only one position projected per program or the Science and Engineering positions where a choice of programs had been indicated as suitable for one position.

6.3 Levels of Need for Degree Programs

The six Levels of Need for Degree Programs were defined as:

Highest Need Level - 22 or more positions and outside indication of need
Second Need Level - 11-22 positions
Third Need Level - 5-10 positions and outside indication of need
Fourth Need Level - 5-10 positions and no outside indication of need
Fifth Need Level - 2-4 positions and no outside indication of need
Sixth Need Level - oversupply based on outside indicators

The few exceptions to the above definitions are pointed out in the following explanations of programs assigned to each need level.

6.4 Degree Programs at Each Need Level

Highest Need Level Degree Programs (over 22 positions and outside indication of need)

BEd French Immersion
Mechanical Engineering
Physiotherapy

Graduates with a BEd who can teach the French language to English speaking students and who are bilingual in the teaching of other subjects (such as graduates from College St. Jean) are in great demand in Northern Alberta, based on employer comments. There is a high number of mechanical engineering positions projected and few available people with that training to fill the positions, based on available manpower trends. Physiotherapy

graduates are in great demand, based on a fairly high vacancy rate in March, 1984, employer comments and available manpower trends.

Second Need Level Degree Programs (11-22 positions and no outside indication of need)

BEd French
IA & Voc Ed
Math, Science
Special Ed
BSW
Electrical Engineering

Four kinds of BEd graduates were placed at the second need level: teachers who can teach the French language to English speaking students, teachers with a specialization in Industrial Arts or Vocational Education, teachers with a specialization in both Math and Science, and teachers with a special education concentration of courses. Social Work degrees fell into this category by virtue of numbers although the percentage of reported vacancies in March, 1984, was low. Available manpower trends indicated people with electrical engineering degrees in Northern Alberta were very few; however, the program was left in the second level category since the number of projected positions was near the bottom of the range for that category.

Third Need Level Degree Programs (5-10 positions and outside indication of need)

Computer Science
Chemical Engineering
Mining Engineering
Medical Doctors
Occupational Therapy

Computer Science graduates were reported to be very difficult to locate in 1985 according to one major industrial employer. Both chemical and mining engineers are in short supply in Northern Alberta in terms of available manpower trends.

Medical doctors were reported to be difficult to hire by one employer. Only two general MDs were projected; the other positions were all specialists (see Table 18). Private practice medical doctors were not contacted in the Manpower Survey. The

only positions projected were those foreseen by hospital respondents. The projections for medical doctors are, therefore, probably low.

Occupational therapy is placed in third level by virtue of a very high percentage of reported vacancies and an available manpower trend indicating very few trained and available people in Northern Alberta.

Fourth Need Level Degree Programs (5-10 positions and no outside indication of need)

BEd Home Ec
Language Arts
Math
Reading, Math, Social Studies
Unspecified
BScN Community Health
Psychiatric
Unspecified
Pharmacy
Speech Therapy

BEd graduates falling in the fourth need level included home economics majors, language arts majors, mathematics majors, and graduates with concentrations in reading, mathematics and social studies. The high number of unspecified BEd projections reported were offset by the high and increasing trend of available teachers in the region.

There were no outside indicators of assistance on the nursing degree positions. Vacancy rate information does not differentiate degrees versus diplomas.

Pharmacy positions were projected by two types of sources: hospitals and private pharmacists. The latter group were only sampled. The numbers projected are most probably a low estimate.

A speech therapy position was considered difficult to fill by one employer. However, the AHSSDC vacancy rate was very low. Therefore, the two opposing indicators were considered to cancel each other out and the program was left in the category in which it fell based on number of projected positions. Projections for speech therapists came from both education as well as health

employers.

Fifth Need Level Degree Programs (2-4 positions and no outside indication of need)

BEd Adult Ed
Business Ed
Dentistry
Dietetics
Metallurgical Engineering
Mineral Processing Engineering
Geology
Geophysics

Only 2 to 4 positions were projected for each of the programs in the fifth need level. Dentistry positions are likely a low projection since only a sample of dentists were contacted in the survey. There were no dietetics positions reported vacant in the AHSSDC 1984 survey.

Sixth Need Level Degree Programs (oversupply based on outside indicators)

BEd Elementary
Civil Engineering
Commerce
Forestry

Based on available manpower trend data, the first three programs listed above are oversupplied with people who are trained and available in Northern Alberta compared to the number of positions projected. Projected commerce positions may be underrepresented as well since only a sample of chartered accountants were surveyed. Employers indicated an oversupply of unspecialized elementary teachers except in very remote areas. Forestry graduates were reported to be vastly oversupplied according to one employer.

Table 21

Priority List for Degree Programs for the Current Economic Climate

Highest Need Level	BEd French Immersion
	Engineering - Mechanical
	Physiotherapy
Second Need Level	BEd French
	IA & Voc Ed
	Math, Science
	Special Ed
	BSW
	Engineering - Electrical
Third Need Level	Computer Science
	Engineering - Chemical
	Mining
	Medical Doctors
	Occupational Therapy
Fourth Need Level	BEd Home Ed
	Language Arts
	Math
	Reading, Math, Social Studies
	Unspecified
	BScN Community Health
	Psychiatric
	Unspecified
	Pharmacy
	Speech Therapy
Fifth Need Level	BEd Adult Ed
	Business Ed
	Dentistry
	Dietetics
	Engineering - Metallurgical
	Mineral Processing
	Geology
	Geophysics
Sixth Need Level	Commerce
	BEd Elementary
	Engineering - Civil
	Forestry

6.5 Levels of Need for Diploma Programs

The six Levels of Need for Diploma Programs varied somewhat from those for degree programs and are defined as follows:

Highest Need Level - over 20 positions and outside indication of need
Second Need Level - over 20 positions
Third Need Level - 10-20 positions and outside indication of need
Fourth Need Level - 5-10 positions
Fifth Need Level - 2-4 positions
Sixth Need Level - oversupply based on outside indicators.

There were a few exceptions to the definitions and they will be explained in the following section.

6.6 Diploma Programs at Each Need Level

Highest Need Level Diploma Programs (over 20 positions and outside indication of need)

Dental Hygienist
Power Engineering Technologist

Employer comments supported placing dental hygienists in the highest need category. Due to sampling of dental offices, the number of dental hygienists projected is likely an underestimate.

Two employers took opposite stands on the difficulty in filling power engineering technology positions. However, the employer reporting difficulty filling the positions also had a high number to fill. The placement data from NAIT indicated 41 percent of the 1984 3rd class power engineering class had been placed. Five percent were in non-training related employment and the remaining 54 percent either were not traced or were not employed.

Second Need Level Diploma Programs (over 20 positions)

Early Childhood Development
Nurses (Degree or Diploma)

Very high numbers were projected for both early childhood development graduates (for day care worker and play school teacher positions) and for nurses, either with a degree or a diploma. The number of vacancies reported in March 1984 by the AHSSDC for all nurses was two-thirds of the number projected by employers for 1986.

Third Need Level Diploma Programs (10-20 positions and outside indication of need)

Computer Systems Technologist
Dental Assistant
Instrumentation Engineering Technologist
Medical Lab Technologist

Most of the dental assistant and medical lab technology graduates of the 1984 classes were hired and two-thirds of the computer systems technology graduates were hired. The numbers projected for dental assistants would be an underestimate due to sampling. Available manpower trends indicated few available people in Northern Alberta with computer systems technology training. Although only 55 percent of the NAIT 1984 instrumentation engineering technology class reported training-related jobs, two employers projected the need for this training would be high, particularly if Fort McMurray becomes the site of another major plant development.

Fourth Need Level Diploma Programs (5-10 positions)

Administration/Finance/Marketing
Criminology Degree or Social Services Diploma
Dietary Tech
Library Technician
Medical X-Ray Tech
Occupational Health Nurse
Respiratory Tech
Secretarial Sciences
Social Sciences Degree or Diploma

Four of these programs are placed at fourth level by virtue of numbers of projected positions: dietary tech, medical X-ray tech, occupational health nurse, and administration, finance or marketing. For the first two of these programs, over half the NAIT 1984 classes reported training related employment; very few vacancies were reported in March, 1984.

Both library technicians and respiratory technicians were moved up to this level of need due to very high employment rates for 1984 graduates (82 percent for library tech at Grant MacEwan and 93 percent for respiratory tech at NAIT) plus the fact that available manpower trends were extremely low for library technicians and the vacancy rate for respiratory technicians was very high in March 1984.

Three programs had more positions projected than the fourth level range, however, available manpower trends indicated an available supply for people with criminology degrees or social services diplomas and for social sciences degrees or diplomas. Menzies (1982) pointed out that secretarial science training will lead to unemployment for many women. She projected the supply of female clerical workers in Canada to outreach demand by between 15 and 25 percent as early as 1990. This assumption was based on one-third of the female labour force continuing to seek clerical work. Menzies projected that the need is for electronic technologists and technicians, systems analysts, senior analysts, senior programmers, technical programmers, systems programmers, data processors and data encoders. Secretarial sciences positions were, therefore, classified at the fourth need level.

Fifth Need Level Diploma Programs (2-4 positions)

Addictions Counselling
Agriculture
Appraisal and Assessment
A-V Tech
Biomed Tech
Combined Lab and X-Ray Tech
Civil Eng Tech
Denturist
Eng Design and Drafting Tech
Legal Secretary

Life Skills
Mechanical-Industrial Eng Tech
Recreation Therapist
Youth Development

The positions listed at the fifth need level had no outside indications of great need and were few in number for each program. Employment rates in related fields of NAIT 1984 graduates ranged from 40 percent for denturists through 51 percent for combined lab and X-ray technologists to 56-58 percent for civil engineering technologists, engineering design and drafting technologists and mechanical-industrial engineering technologists. AHSSDC vacancies were negligible for combined lab and X-ray technolgists, addictions counselling, and life skills.

Sixth Need Level Diploma Programs (oversupply indicated by outside sources)

Accounting
Registered Nursing Assistants

Available manpower trends indicate an oversupply of people in Northern Alberta with accounting training. Employers indicated no difficulty in hiring RNA's and the vacancy rate in March 1984 was low.

Table 22

Priority List for Diploma Programs for the Current Economic Climate

Highest Need Level	Dental Hygienist Power Eng Tech
Second Need Level	Early Childhood Development Nurses - Degree or Diploma
Third Need Level	Computer Systems Tech Dental Assistant Instrumentation Eng Tech Medical Lab Tech
Fourth Need Level	Admin/Finance/Marketing Criminology Deg or Social Services Dip Dietary Tech Library Tech Medical X-Ray Tech Occup Health Nurse Respiratory Tech Secretarial Sciences Social Sciences Deg or Dip
Fifth Need Level	Addictions Counselling Agriculture Appraisal and Assessment A-V Tech Biomed Tech Combined Lab and X-Ray Tech Civil Eng Tech Denturist Eng Design and Drafting Tech Legal Secretary Life Skills Mech-Industrial Engineering Tech Recreation Therapist Youth Development
Sixth Need Level	Accounting Registered Nursing Assistants

Life Skills
Mechanical-Industrial Eng Tech
Recreation Therapist
Youth Development

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Fourth Need Level	Admin/Finance/Marketing Criminology Deg or Social Services Dip Dietary Tech Library Tech Medical X-Ray Tech Occup Health Nurse Respiratory Tech Secretarial Sciences Social Sciences Deg or Dip
Fifth Need Level	Addictions Counselling Agriculture Appraisal and Assessment A-V Tech Biomed Tech Combined Lab and X-Ray Tech Civil Eng Tech Denturist Eng Design and Drafting Tech Legal Secretary Life Skills Mech-Industrial Engineering Tech Recreation Therapist Youth Development
Sixth Need Level	Accounting Registered Nursing Assistants

It is assumed that current Bursary recipients would need to be taken into account in working from the Priority lists.

6.7 Priorities for Bursaries Based on Change Scenarios

Approximately one-third of the employers projecting positions used a Change scenario in addition to the No Change scenario. Change scenario numbers are to be added to the No Change scenario, should the predicted changes become actuality.

Where expanded services are projected (hospitals, libraries, Native centres) for Grande Prairie and Peace River and small northern towns, Bursary Committee members themselves will be in the best position to ascertain whether some or all of these projects are going ahead.

Specifically they include

Grande Prairie long-term care facility to open in fall of '86
High Prairie - Psychiatric Unit to open in '86
Slave Lake Auxiliary Hospital to open in '87
McLennan - new hospital to open in '87
Valleyview - hospital expansion to open in '87
Native Outreach - expansion of office & service in Peace River - Slave Lake to begin '86
High Prairie Native Friendship Centre - additional counsellor BSW for '86
Peace Region Library System - to begin in '86

The Grande Prairie unit is already well under construction and very likely to open as projected. No first hand observations were made on the other health care units. The Grande Prairie hospital expansion projections are clearly indicated in Table 14. The other expansion projections are reported under separate cover.

The priorities for programs can be increased according to specific projects that are judged to be going ahead at the time of bursary decisions.

The scenarios for increased oilfield activity or oil/gas activity are more difficult to judge. Although the Alberta

Bureau of Statistics population projections are very modest for the near future, there is an air of increasing optimism in terms of industry expansion in the NADC region. If the optimism continues into July, 1985, it is recommended that the 1986 increased oilfield activity projections be added to the No Change projections from the Cold Lake Area (Table 13), the Peace River and Small Towns Region (Table 16), and the Unspecified Locations (Table 17) and the priorities of programs be adjusted accordingly. Should the new oil sands project in Fort McMurray go ahead it will be a newsworthy event and the 1986 Table 15 Change scenario numbers can then be added to the No Change projections.

The Grande Prairie Change scenario for oil and gas activity depends on a marked change predicted by only one employer. A major newsworthy development for Grande Prairie would indicate the need to include the '86 Change projections from Table 14 in addition to the No Change projections in arriving at Priority listings.

The 1987 Change scenarios will have to be evaluated in the light of industry developments in late 1985 and early 1986. As indicated earlier, employers were less confident and more cautious in making projections for employment for 1987 and as a result, the actual numbers projected for 1987 are likely to be under-estimates compared to the 1986 projections. A few of the employers from Fort McMurray suggested that the employment projections be collected annually to increase their accuracy.

6.8 Summary

Two Priority Lists for awarding NADC Bursaries were developed: one for degree programs and one for diploma programs. The programs in each list are organized into six levels of descending need. The programs were rank-ordered based on the congruence between manpower projections from the survey and outside supporting data. Sources of supporting data used in arriving at ranking decisions included direct comments from employers, the Alberta Health and Social Services Disciplines Committee reports, the NAIT 1984 Placement Fact Sheets and the trends derived from reviewing available manpower data trends.

Thirty-six degrees or specializations within degrees and

thirty-three diplomas were ranked according to need level on the Priority Lists for bursaries, given the current economic climate. Additional positions should be added to the No Change totals and the Priority Lists revised accordingly as scenarios for change materialize within the regions.

The major employers in Northern Alberta are well represented by the numbers in the tables since all major employers were contacted and the response rate was high. Local businesses such as dentists, pharmacists, lawyers, and engineering firms are less well represented since only a sample were contacted; however, the numbers of positions projected by the local businesses in the sample were relatively small compared to those of the major employers.

7. Conclusions and Recommendations

Conclusion 1

Employer projections for positions to be filled in the future are not collected and coordinated by any agency for Northern Alberta.

Recommendation 1

The Northern Alberta Development Council should continue the Manpower Survey in future years to provide the level of information needed for making bursary decisions until such time as a Planning Secretariat assumes the responsibility.

Conclusion 2

Employers projected future positions with significantly greater confidence for one year ahead compared to the second year ahead.

Recommendation 2

Employer projections of available positions should be collected annually.

Conclusion 3

Of the 270 employers contacted, responses were received from 75.6 percent. Of these, slightly over half projected positions for 1986 or 1987. Most of those with positions projected a number of positions; some projected only one or two positions.

Recommendation 3

Employers who projected three or more positions in the 1985 Manpower Survey should be contacted for future projections in the next NADC Manpower Survey. This would include approximately 12 employers in Engineering & Science, 20 employers in Medicine &

Health, and 40 employers in Education, Social Science and Management.

Conclusion 4

The three most comprehensive validation checks for the Manpower Survey were the NAIT Placement Sheets, the trends derived from available manpower data, and the Alberta Health and Social Services Disciplines Committee's annual report on vacancy rates for health care positions.

Recommendation 4

The NAIT Placement Sheets and trends derived from available manpower data should be used as a minimum validation check on future Manpower Survey data collected.

Conclusion 5

The AHSSDC vacancy rates on personnel working in health and social service positions for the Northeast and Northwest regions were not dissimilar to the data collected on the Manpower Survey in many categories. Furthermore, most health care respondents did not use the Change Scenario space on the survey to make projections based on economic changes but rather on expanded employer services.

Recommendation 5

A Northern Alberta Development Council representative should request the use of AHSSDC data for use in making NADC Bursary decisions in the health and social services field. (Reportedly, 80 percent of AHSSDC survey respondents have replied by June of the survey year and this would be a sufficient response rate for making Bursary decisions.)

Conclusion 6

Many of the major companies reported a hiring policy of placing new degree-holding employees in training positions in southern Alberta for a minimum of one year.

Recommendation 6

The time before requiring return service for the NADC Bursary should be extended to 18 months after graduation for Bursary recipients who have completed degree programs and undertaken training programs with major employers in southern Alberta, and out of fairness, to all other Bursary recipients as well.

Conclusion 7

Communication related to the Bursary is currently limited, to the detriment of the Bursary Program. Post-secondary institution interviewees thought the Bursary was helpful and that it should be publicized more both on campuses and with high school students. Some employers requested lists of Bursary recipients to enable them to contact future graduates regarding positions. In addition, some employers reported that students had indicated the need for a list of northern employers to assist them in locating a job to meet their return service agreement.

Recommendation 7

Greater publicity should be provided for the NADC Bursary directed to high school and post-secondary students. As well, lists of Bursary recipients should be available to employers placing such a request and lists of employers should be made available to students who have received bursaries and are in their graduating year.

Conclusion 8

The Bursary program itself was not evaluated in this study. No contact was directly made with bursary applicants or recipients or school counsellors. The extent to which the bursary meets the needs of employers was not explored.

Recommendation 8

An in-depth evaluation of the NADC Bursary program including the extent to which it meets the needs of students and of employers should be considered.

Conclusion 9

Most government departments do not regularly collect data and report on conditions in Northern Alberta; consequently, this information is rather limited. The most recent provincial government reports on economic and labour force conditions in Northern Alberta were prepared by Alberta Manpower in early 1984. Given this situation, a more organized approach to information collection and analysis for the north would provide the Council with relevant, current information. Arrangements might be made with agencies to provide information as it is obtained, thereby allowing the council to develop a suitable data bank.

Recommendation 9

The Northern Alberta Development Council should gather, on a regular basis, information that will maintain a current awareness of the economic conditions and expected future developments in Northern Alberta.

Conclusion 10

The employer projections given for change scenarios of increased oil/gas activity could apply to the priority lists in 1985.

Recommendation 10

If the optimism in terms of industry expansion in the NADC region continues from the spring of 1985 into July, 1985, it is recommended that the 1986 increased oilfield activity projections be added to the No Change projections from the Cold Lake Area (Table 13), the Peace River and Small Towns Region (Table 16), and the Unspecified Locations (Table 17) and the priorities of programs be adjusted accordingly.

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Number/
Numéro

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Research Report

Prepared for
NORTHERN ALBERTA
DEVELOPMENT COUNCIL

NORTHERN ALBERTA
MANPOWER NEEDS ASSESSMENT

EXECUTIVE SUMMARY

NORTHERN ALBERTA MANPOWER

NEEDS ASSESSMENT

FINAL REPORT

EXECUTIVE SUMMARY

Prepared for

The Northern Alberta Development Council

Peace River, Alberta

By

Harvey Social Research Ltd.

Sherwood Park, Alberta

June, 1985

EXECUTIVE SUMMARY

In 1985 the Northern Alberta Development Council undertook a study to provide data on manpower needs in Northern Alberta. Information on employers' needs for graduates from post-secondary institutions was required to assist the NADC Bursary Committee in making its awards. The Committee endeavours to award bursaries that meet employer as well as student needs, thereby enabling student bursary recipients to meet the return service obligation aspect of the Bursary. The bursaries are directed to candidates in post-secondary educational programs requiring a minimum of one full year attendance.

The firm of Harvey Social Research Ltd. was contracted to conduct the study and Krawetz and MacDonald Research Management Consultants was retained as a sub-consultant.

The study approach involved collecting data directly from employers as to their specific manpower needs and from government agencies and post-secondary institutions to provide a broader view of economic conditions and projected developments for Northern Alberta.

The Government Agency Survey on General Economic and Employment Conditions

Nineteen provincial and federal departments were contacted for reports or specific information related to manpower needs and economic developments. The Alberta departments of Energy & Natural Resources, Housing, Manpower, Social Services & Community Health, and Tourism & Small Business (Northern Development Branch), as well as Employment and Immigration Canada and Statistics Canada provided the main sources of information for the survey.

Projected population growth for the three census divisions included in the study area based on Alberta Treasury Bureau of Statistics Series A Projections was 10,400 for C.D. 12 (including Fort McMurray), 3,200 for C.D. 13 (including Whitecourt) and 10,600 for C.D. 15 (including Grande Prairie) from 1985 to 1990.

Recovery from the recent recession is evidenced in Northern Alberta by increased oil and gas activity throughout the north,

especially heavy oil and oil sands developments in the eastern region of Northern Alberta. The construction industry, and the oil field service industry are both benefitting from this activity. The other sectors of the economy such as agriculture, coal and forest products, and services (for example, health or education) are not expected to expand substantially. The energy industry is the only high profile source of growth seen for Northern Alberta in the short term.

Increased energy industry activity in Northern Alberta is expected to create more jobs; however, the actual effect on unemployment levels is not certain, given general growth in the working age population and possible in-migration of people with skills needed. The only major impact foreseen is the possible construction of a new oil sands plant. Other sectors, such as construction, manufacturing, transportation, business and health services are not expected to expand significantly to affect general unemployment levels.

Only one source identified in the survey of government agencies, the Alberta Health and Social Services Disciplines Committee, provided recent data on highly qualified manpower for Northern Alberta. While there are models used by the federal and provincial governments to forecast manpower demand, they are not adapted for use in a region the size of Northern Alberta.

The Manpower Survey

A total of 270 employers were contacted, either by mail, telephone or a personal interview and asked to project the positions they anticipated would need to be filled by graduates of post-secondary institutions in 1986 and 1987. The sample included all hospital administrators, school superintendents, health units, AADAC local units, native friendship centres, family and community support services and colleges in Northern Alberta. As well, the sample included a cross-section of local businesses, large firms with head offices in Edmonton or Calgary, municipal offices for all towns and cities, provincial and federal government departments with offices in the region, referrals from Chambers of Commerce, villages, counties, I.D.'s and M.D.'s and a selection of libraries.

Of the 257 employers included in the mailed survey, about 60

percent responded. With limited telephone follow-up to non-respondents and 13 personal or telephone interviews with major industry recruitment officers, the response rate was increased to 75 percent. Due to systematic selection for follow-up calls, all of the major employers for Northern Alberta were contacted. A total of 111 employers projected positions requiring highly qualified manpower for 1986 and 1987.

The employers projected positions both for a current economic climate scenario and for any likely scenario involving a major economic change such as increased oilfield activity or expanded services by the employer.

Employers were asked to report only positions that could be filled by new graduates. They were also asked to indicate positions they anticipated having particular difficulty filling.

The responses from the employers were grouped according to region and included the Cold Lake and Area Region, Grande Prairie, Fort McMurray, Peace River and Small Northern Towns (grouped as a region) and a region labelled Unspecified Northern Locations for southern employers who did not report exact locations of projected positions. Projections for specific diploma or degree graduates were reported both for the condition of no economic change (that is, normal staff turnover) and for specific major changes such as a new hospital or increased oilfield activity in the area. The total numbers needed for each of the programs in each of the next two years ('86 and '87) are included in the regional tables found in the main report. These regional tables contain the raw data and do not take any other factors into account such as the number of trained people already in the area who could be expected to compete for jobs.

The Post-Secondary Institution Survey

Five post-secondary institutions including three in the NADC area (Grande Prairie Regional College, Fairview College and Keyano College), as well as Lakeland College and NAIT were contacted for any available information on employers' needs.

Of the five institutions, NAIT was the only one to have an ongoing system for tracking its graduates to their first jobs and reporting the results by program. The annual report of graduate

placements from NAIT includes information for each program on percentage of graduates obtaining training-related employment.

Development of the Priority Program Lists

Four outside sources of information proved useful in assigning priorities to the positions projected by northern employers. These included the Alberta Health and Social Services Disciplines Committee annual report for 1984, the NAIT 1984 Graduate Placement Fact Sheets Report, a limited review of available manpower data for trends, and comments made by employers either written on the surveys or in the course of the telephone and personal interviews.

The degree and diploma programs were separately rank ordered according to the total number of projected positions for the "No Change" (current economic climate) scenario. The rank ordered lists were then divided into six levels of need based on the numbers of positions projected and information available from the four outside sources. The results are presented in the following priority lists (List for Degree Programs and List for Diploma Programs).

In each list the need for program graduates according to the Manpower Survey progresses step by step from the highest need to the lowest need. The need levels represent numbers required from each type of program as well as difficulty in finding such graduates for positions. The need for over 20 graduates is projected for each of the Highest Need Level programs, for example. An oversupply of trained people in Northern Alberta is indicated for programs in the Sixth (or lowest) Need Level.

It should be pointed out that because employers were sampled, the actual number of graduates needed would be higher than the data collected would indicate. This was one reason for not attaching specific numbers to the programs in the Priority Lists. The other main reason was that employers were asked to project their needs as carefully as possible. There was no commitment associated with completing the survey information, however.

Priority List for Degree Programs in the Current Economic Climate

Highest Need Level	BEd French Immersion Engineering - Mechanical Physiotherapy
Second Need Level	BEd French I A & Voc Ed Math, Science BSW Engineering - Electrical
Third Need Level	Computer Science Engineering - Chemical Mining Medical Doctors Occupational Therapy
Fourth Need Level	BEd Home Ec Language Arts Math Reading, Math, Social Studies Unspecified BScN Community Health Psychiatric Unspecified Pharmacy Speech Therapy
Fifth Need Level	BEd Adult Ed Business Ed Dentistry Dietetics Engineering - Metallurgical Mineral Processing Geology Geophysics
Sixth Need Level	Commerce BEd Elementary Engineering - Civil Forestry

Priority List for Diploma Programs in the Current Economic Climate

Highest Need Level	Dental Hygienist Power Eng Tech
Second Need Level	Early Childhood Development Nurses - Degree or Diploma
Third Need Level	Computer Systems Tech Dental Assistant Instrumentation Eng Tech Medical Lab Tech
Fourth Need Level	Admin/Finance/Marketing Criminology Deg or Social Services Dip Dietary Tech Library Tech Medical X-Ray Tech Occup Health Nurse Respiratory Tech Secretarial Sciences Social Sciences Deg or Dip
Fifth Need Level	Addictions Counselling Agriculture Appraisal & Assessment A-V Tech Biomed Tech Combined Lab & X-Ray Tech Civil Eng Tech Denturist Eng Design & Drafting Tech Legal Secretary Life Skills Mech-Industrial Eng Tech Recreation Therapist Youth Development
Sixth Need Level	Accounting Registered Nursing Assistants

Priorities Based on Economic Change

Approximately one-third of the employers projected positions that would be required in addition to the "No Change" scenario for major developments they foresaw in their region.

Manpower needs required to operate expanded services were projected for five hospitals or hospital units, two native offices and a regional library system. Increased oilfield activity projections were made by employers in the Cold Lake Area and in the Peace River and Small Towns Region. Many Fort McMurray employers made projections for a new oil sands project.

As these economic developments occur, the projected positions based on each development can be integrated into the numbers and outside considerations used to develop the current priority lists. Updated priority lists based on the changing economic climate will then be available.

Recommendations

It was recommended that manpower survey data be collected annually from employers who projected the need for three or more positions in the 1985 survey.

It was suggested that, in future, permission be requested to use health and social service vacancy data collected by another government agency.

It was recommended that all bursary recipients be given 18 months after graduation before being required to begin their return service agreement.

Increased communication concerning the NADC Bursary, its recipients and Northern Alberta employers was recommended.

The need for an in-depth evaluation of the NADC Bursary Program was pointed out.

Finally, it was recommended that a data bank of regularly updated information pertaining to Northern Alberta economic and labour force conditions should be established.